Adobe Animate CC Help

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Chapter 1: Introduction to Animate CC

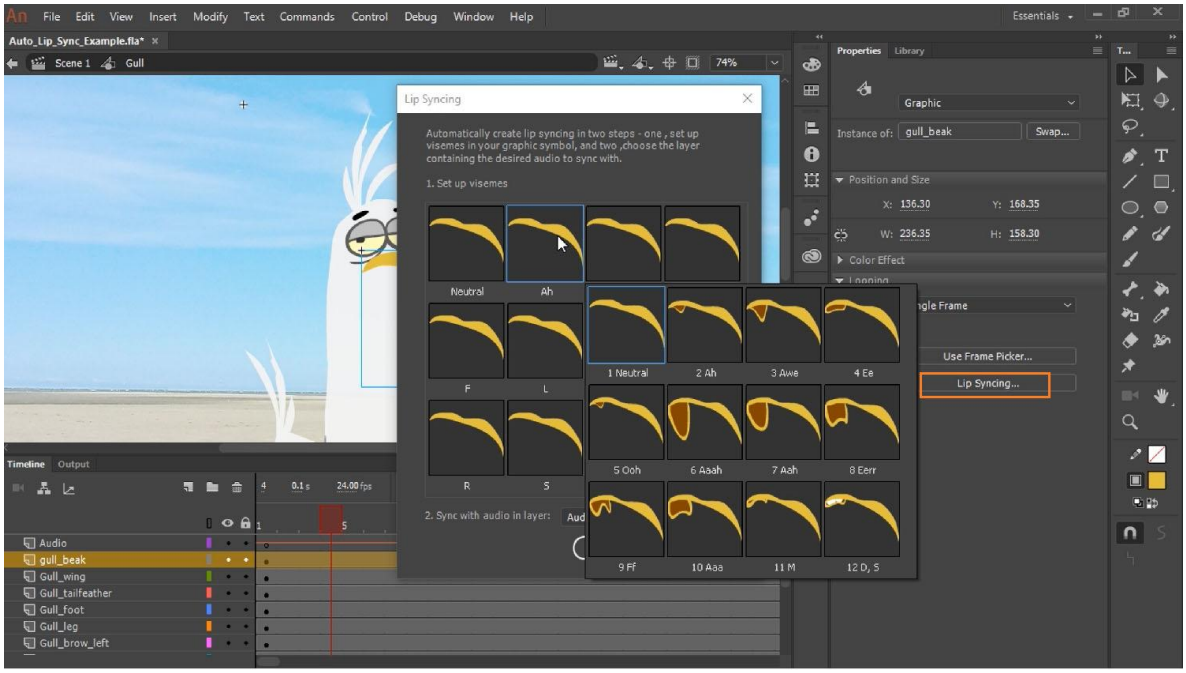
What's New in Animate CC

The October 2018 release of Animate CC (version 19.0) rolls out exciting new features for character animators, game designers, advertisement developers, animators, and educational content creators. Read on for a quick introduction to these features and links to resources offering more information.

Auto Lip-Sync

As a character animator using Animate CC, creating lip syncing was always a time consuming effort. Now, you can match mouth poses to sound inflections automatically with Adobe Sensei powered Animate.

Auto lip-syncing allows easier and faster method of placing appropriate mouth shapes on Timeline, based on the chosen audio layer. You can achieve this using an existing list of mouth poses, drawn within a graphic symbol and label them with corresponding visemes. When you apply auto lip-syncing on a graphic symbol, keyframes are created automatically at different positions matching with the audio visemes, after analyzing the specified audio layer. You can make any further adjustments if you want, by using regular workflows and Frame Picker.



Auto Lip-Sync

For more information, see Create symbol instances in Animate CC.

VR authoring and publishing (Beta)

As a 2D game developer, educationist, or web developer, you can use 2D skill set in Animate and export panorama or 360 virtual reality animations. You can use these virtual reality animations as Facebook feed, use in Microsoft Office products or in any website.

Animate now introduces VR 360 and VR panorama document types which enable you to create such engaging content with ease. Also, you can use the virtual reality document type to import 3D model content (.glb files) to an Animate project and interact with VR output.

You can click and move MovieClip instances in the Preview panel. Animate detects the objects automatically when you click and move them around. They move along a cylinder or a sphere path depending on the selected document type.

Animate also lets you manage the virtual reality animations at runtime by using APIs. For example, you can introduce some objects in a 360 virtual reality environment when a user clicks a button.

VR publishing output sample

For more information, see Virtual Reality authoring and publishing.

Asset sculpting for vector and raster content

You can now easily deform complex vector shapes and raster shape using asset warp tool. Create animations without having to redraw assets on each frame.

Using the warp handles that appear on the objects, you can reshape or distort specific object areas while leaving other areas intact. Users can select multiple objects using selection tool and then select asset warp tool to create warp handles on them. All the selected objects are grouped when you create the first warp handle. This asset warp tool enables you to create frame-by-frame animation and tween animations on complex shapes or bitmap images.

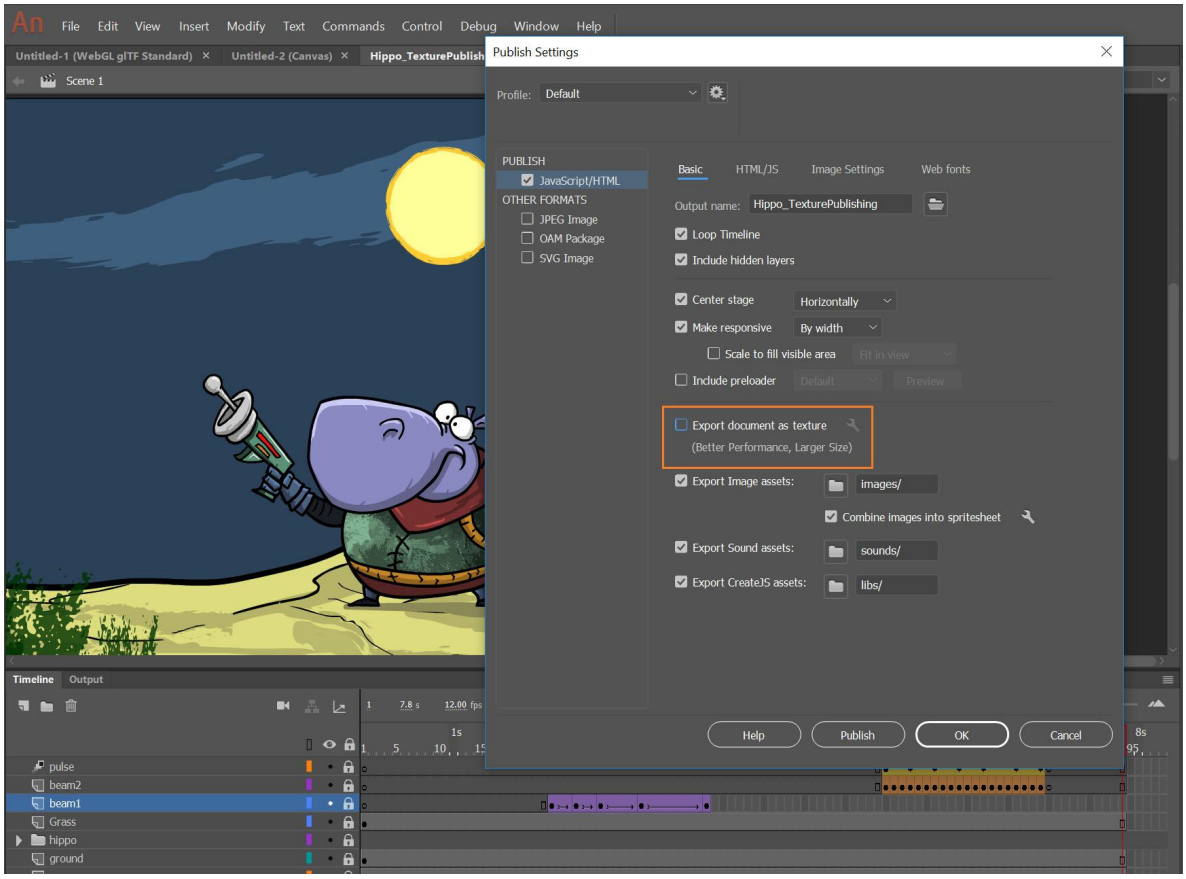
Illustration for asset warping

For more information, see Transforming and combining graphic objects.

Texture publishing for improved performance

As an animator, now you can continue to author content in vector format and export as vector or raster format for HTML 5 platforms.

Click **File > Publish Settings.** If **Export animation as texture** is enabled in **Basic** tab, you can view the texture publishing optionsin **Image Settings** tab. By default, all the symbols are included in texture publishing. To selectively choose symbols for textures, click **Change.**



Texture publishing settings

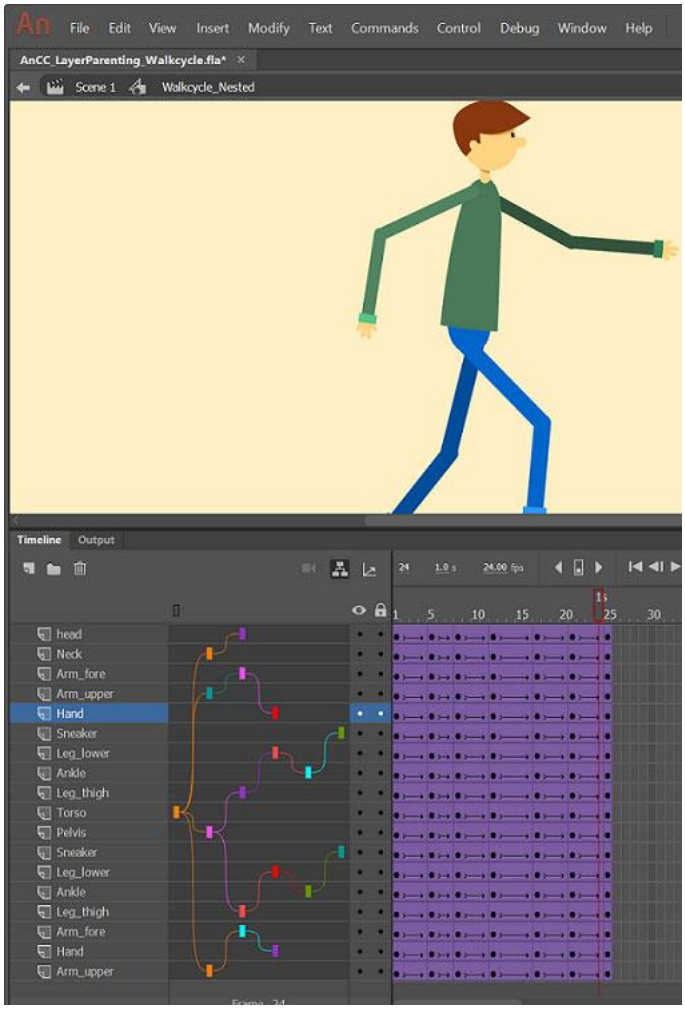
For more information, see **Texture publishing** in Texture publishing.

Layer parenting and layer effects

Layer parenting

Animate allows you to parent one layer to another. Layer parenting is an easy way to allow one layer/object of your animation to control over the other layer/object. As an animation designer or a game designer, you can speed up your animation time as you can control movements of different parts of a character more easily.

Now, you can animate between poses easily by organizing assets in parent-child layers. When an object on the parent layer moves, the child layer automatically moves along with it.



Layer parenting

For more information, see Create timeline layers with Animate CC.

Layer effects

Add tints and filters to layers, play with in and out fades, depth of field, and so on. You can make all these changes without changing objects on stage.

You can use frame level filters to apply them for all the objects at a time in a frame. Apply filters directly on the timeline (frames) without having to place the assets or animation inside a Movie clip. Filters can be applied over all types of assets including graphic symbols and shapes, providing more flexibility.

Using layer effects

Using layer effects

For more information, see Applying layer effects.

Export to GL Transmission Format (glTF)

As an animator, now you can export new glTF standard based animations that can run on Facebook feed and Microsoft Office suite. New WebGL-glTF standard (Beta) and WebGL-glTF Extended (Beta) document types have been added to the existing list of document types in Animate.

You can use standard document type which allows integration with standard glTF playback packages. The extended document type enables you to create advanced animations with interactivity that runs on Animate's new glTF runtime.

WebGL-glTF Export (Standard and Extended)

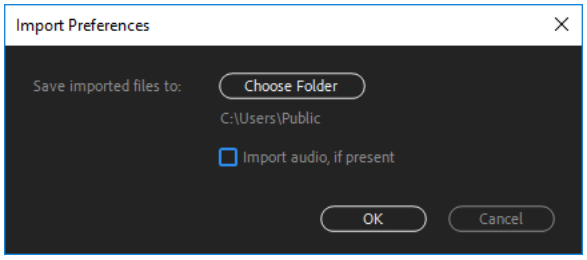
WebGL-glTF Export (Standard and Extended)

For more information, see **Using WebGL-glTF document type** in Virtual reality authoring and publishing.

Improved integration with After Effects

As an Animator, you often need to create animations in Animate and import them into After Effects for post processing tasks. Now, Animate streamlines this workflow by providing a plug-in for After Effects.

You can import Animate FLA files into After Effects to composite them with a video or render them as video with more creative effects. The layer hierarchy of Animate is maintained in After Effects. After Effects can interact with Animate using the plug-in.



For more information, see Importing Animate FLA files into After Effects.

New Home screen

You can get started quickly now with Animate using the new Home screen. Choose the destination for an animation using any of the intents, Animate provides you the preset formats. Choose an intent from the tabs at the top of the screen such as Character Animation, Social, Game, Education, Ads, Web, and Advanced. In Advanced tab, you can choose document types such as HTML5 Canvas, ActionScript 3.0, VR 360 (Beta), and so on.

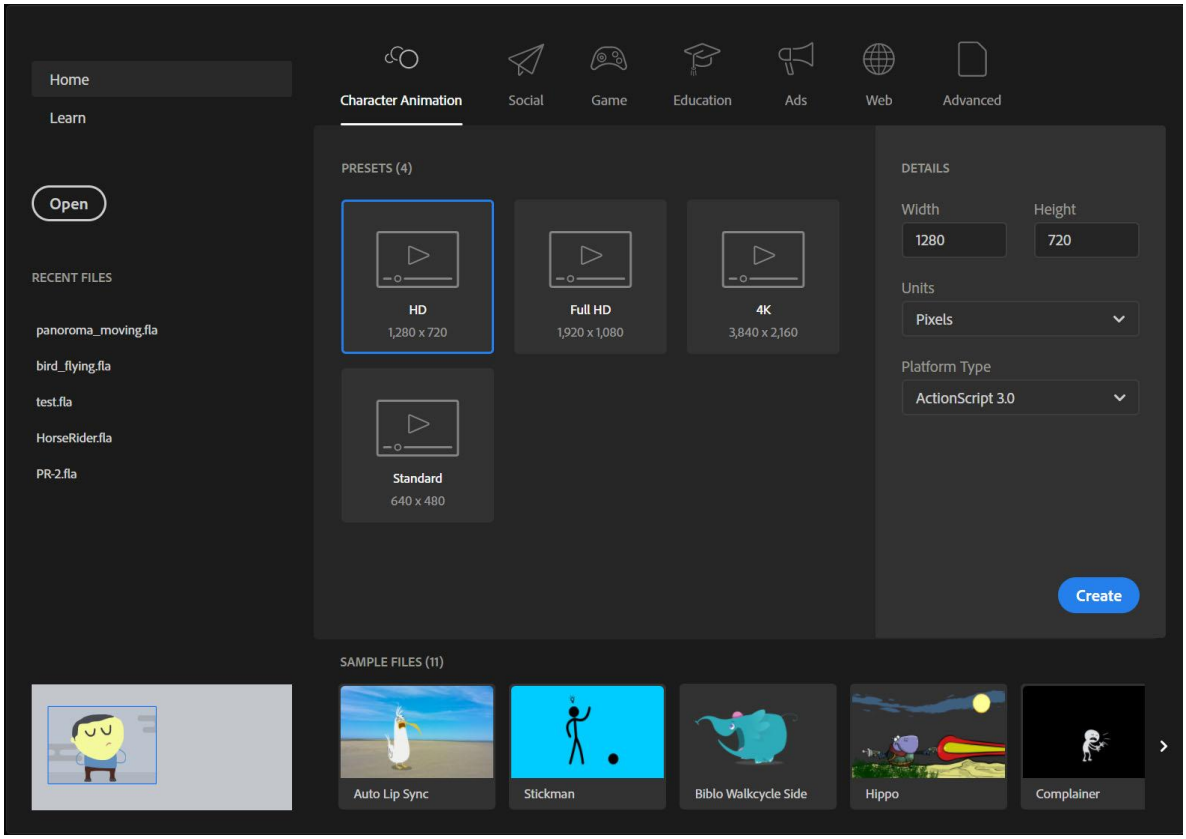
Select the appropriate presets for each of the intents and click **Create** to start creating animations. You can view the recently used files in the left pane. Sample assets are provided at the bottom of the startup screen.

Click **Learn** from the left pane to access recommended tutorials to get started with Animate.

While working with your animations, to create new document you can use **File > New**. Alternatively, you can use the following shortcuts:

Windows OS: CTRL +N.

macOS: CMD + N.



New Home screen

Miscellaneous changes

Paint bucket tool You can now use Paint bucket tool to click and drag across the contours of an object to fill them with a chosen color. You can click and drag the tool in any direction across the contours. Paint bucket tool fills the color wherever dots are captured across the contours.

Quick tween creation You can now create tweens quickly from the stage by selecting the objects. Select the objects at stage, right-click, and choose one of the tween animations to create tweens quickly. If the objects selected are part of multiple layers, a one-second animation is created in all the layers.

Support for MS Office pen Now, Microsoft surface users can get the best performance and line quality as the pen is natively supported.

Better looking interface Animate user interface has been updated using the Spectrum framework to make it as sharp and intuitive as with other Creative Cloud products.

Exit frame sync for graphic Symbols You can synchronize graphic symbols with parent timeline while editing the symbols. When you enter and leave the graphic symbols, the graphic symbols are synchronized and the frame positions are retained.

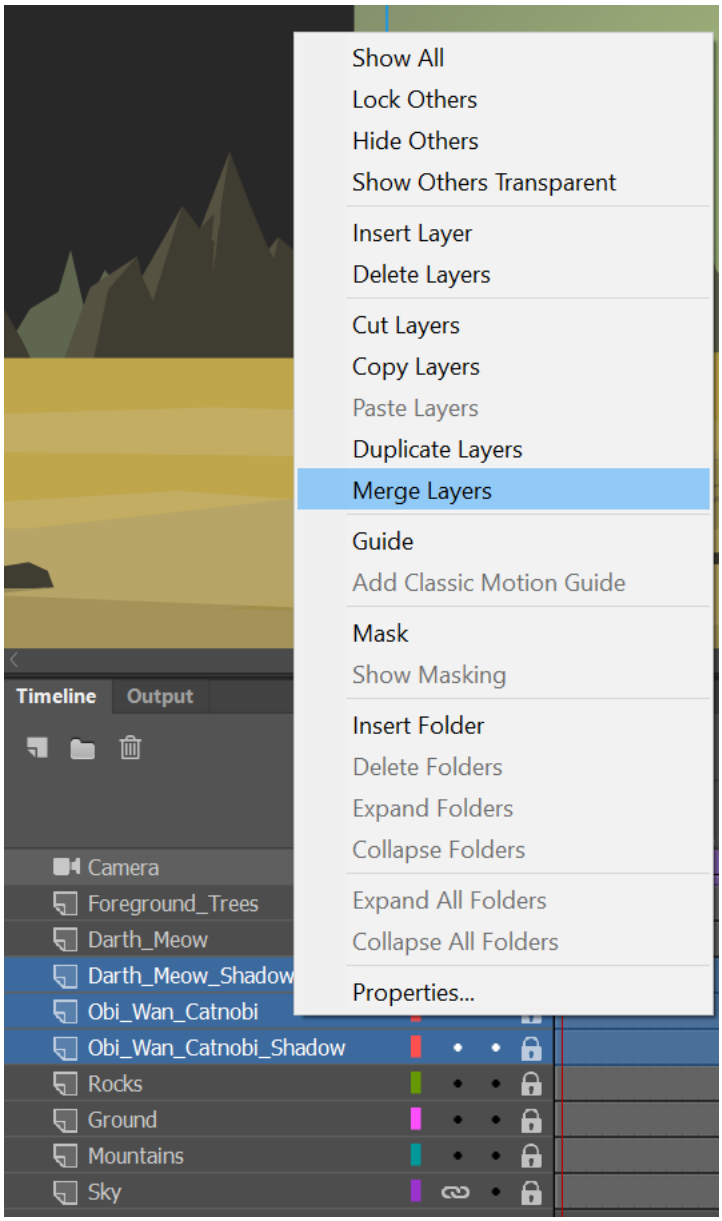
Redesigned Timeline Timeline controls have been redesigned for ease of use. Some of the controls are moved to the top of the timeline. Previously, the controls were placed at the bottom of the timeline.

Brush and eraser tools enhancements Improved drawing experience with Brush for preview and final Brush strokes. Pressure and Tilt options and minimum brush size options are added to Brush tool. Simplified smoothing control is provided for Brush tool. More controls are provided for the eraser tool, all the capabilities of the brush tool are now available for eraser tool.

For more information on eraser tool enhancements, see Erase by dragging.

Merge layers

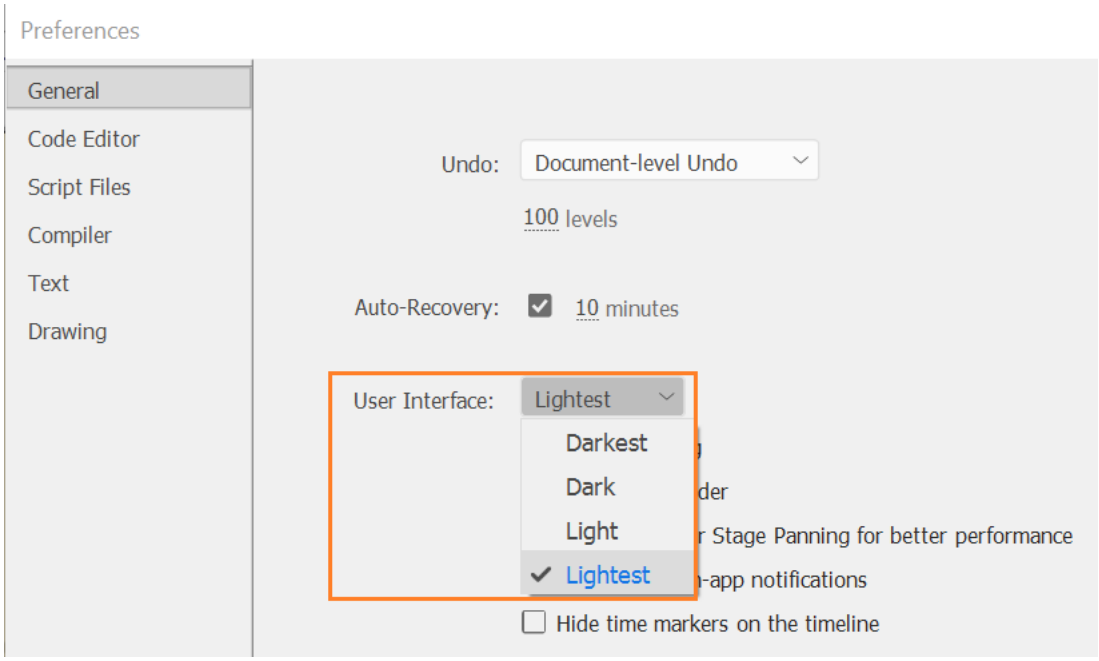
You can group a set of layers and merge them as a single layer. In timeline, select the layers and right-click the selected layers. Choose **Merge Layers** from the pop-up menu as shown in the below screenshot.



Merge layers in timeline

New Themes

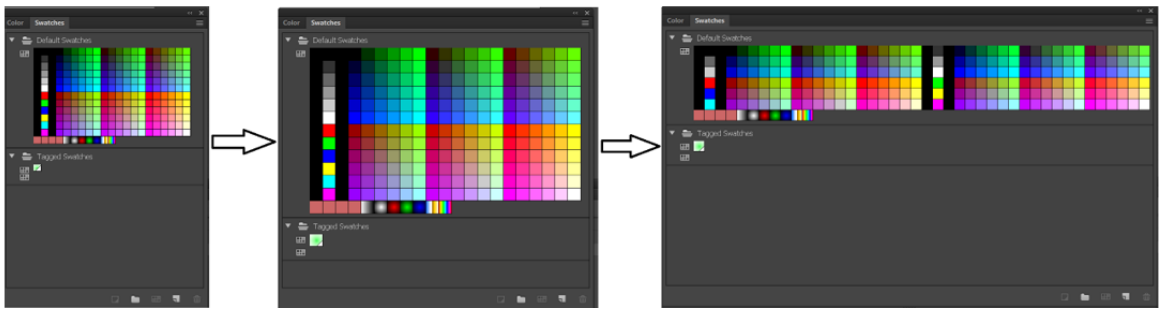
You can now choose any of the four color themes for Animate. To change the theme, select **Edit > Preferences**. In General tab, click the drop-down list menu adjacent to User Interface and choose the appropriate theme.



User interface themes

Swatches panel enhancement

You can expand the swatches panel without affecting its order of colors alignment. When you drag the panel, it increases the size of the swatches as shown below in the second screenshot. If you further drag it, the swatches panel is distributed across multiple columns as shown in the third screenshot below.



Swatches in multiple columns

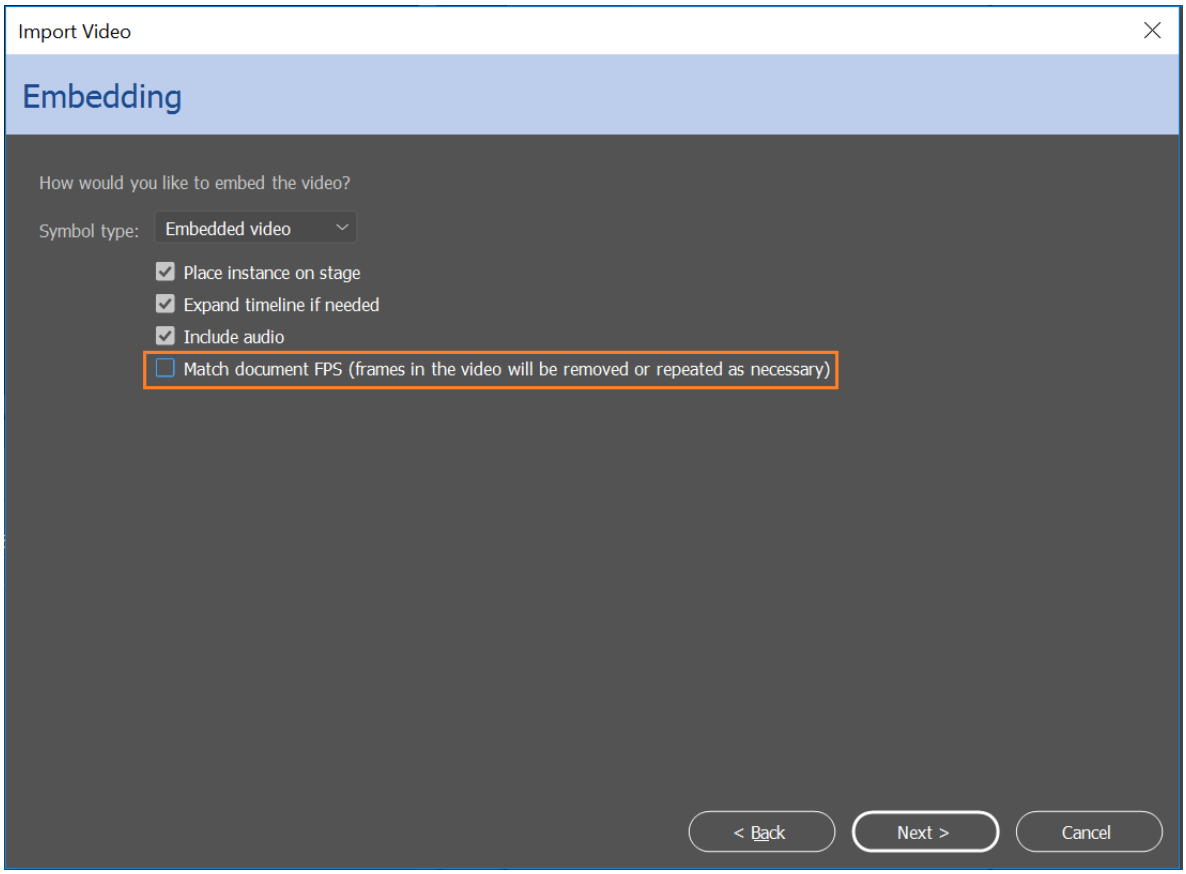
You can export, import or re-use the saved swatches. Tagged swatches can be re-used across all document types in Animate.

H264 video import enhancement

When you import H264 format videos in Animate, by default, the entire video is imported without affecting the number of frames in the video. If you want to match the document FPS, you can select the option in Import Video dialog as shown in the following screenshot.

- If **Match document FPS** is selected, Animate drops some frames as video fps is different from doc fps.
- If **Match document FPS** is not selected, frames are not dropped.

By default, **Match document FPS** option is unchecked.

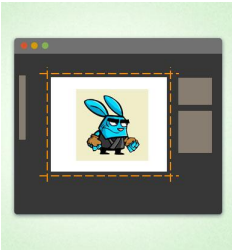
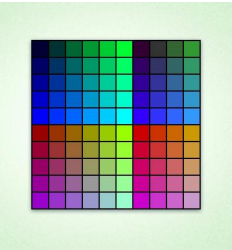

Import Video
Embedding
How would you like to embed the video?
Symbol type:
Embedded video
Place instance on stage
Expand timeline if needed
Include audio
Match document FPS (frames in the video will be removed or repeated as necessary)
< Back
Next >
Cancel

Match document FPS

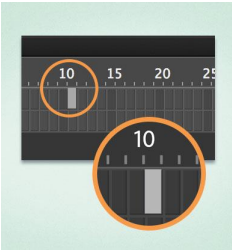
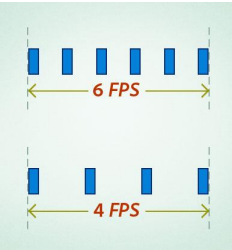
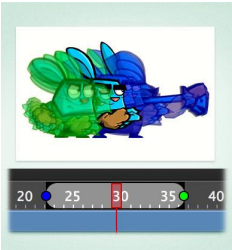
What is Animate CC?

Visual Glossary

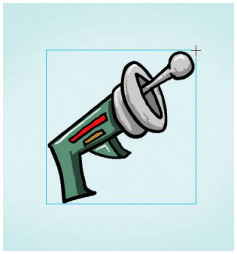
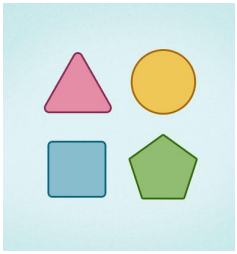
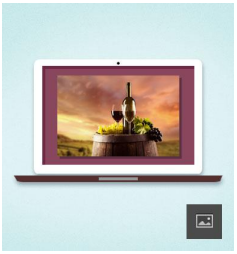
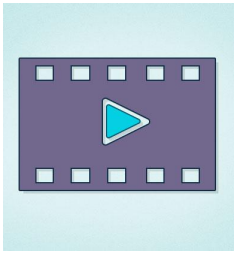
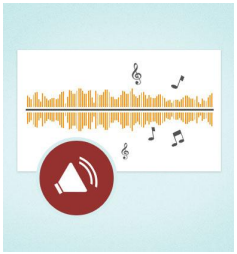
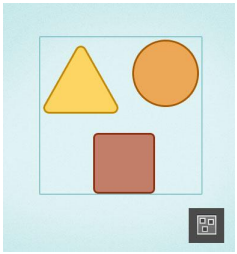
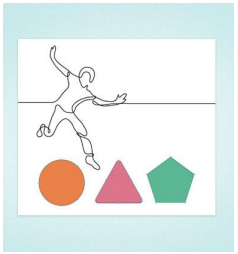
Basic tools, Workspaces, and Colors

Basic tools	 Workspaces	 Colors	

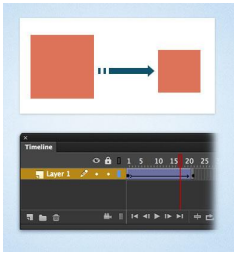
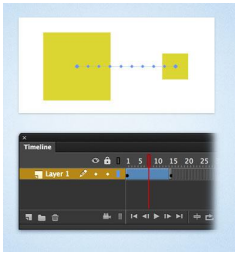
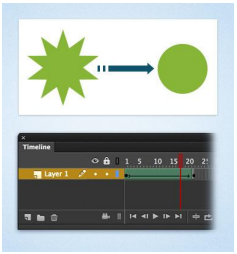
Time

Timeline	 Frames	 FPS	 Onion Skinning
Layers			

Elements

 Symbols	 Raw Shapes	 Bitmap	 Video
 Audio	 Groups	Text	 Drawing Objects

Tweens

 Classic Tween	 Motion Tween	 Shape Tween	

Animate CC system requirements

Applicable for: October 2018 (19.0) release

System requirements for earlier releases: Animate CC system requirements | earlier releases

Minimum system requirements for Animate CC

Windows

	Minimum requirement
Processor	Intel Pentium 4 or Intel Centrino, Intel Xeon, or Intel Core Duo (or compatible) processor (2GHz or faster processor)
Operating system	Microsoft Windows 7 with Service Pack 1 or Windows 10 version 1703
RAM	2 GB of RAM (8 GB recommended)
Hard disk space	4 GB of available hard-disk space for installation; more free space required during installation (cannot install on removable flash storage devices)
Monitor resolution	1024x900 display (1280x1024 recommended)
Internet	Internet connection and registration are necessary for required software activation, validation of subscriptions, and access to online services.*

macOS

	Minimum requirement
Processor	Multicore Intel processor
Operating system	macOS X version 10.12 (64 bit) or version 10.13 (64 bit)
RAM	2 GB of RAM (8 GB recommended)
Hard disk space	4 GB of available hard-disk space for installation; more free space required during installation (cannot install on a volume that uses a case-sensitive file system or on removable flash storage devices)
Monitor resolution	1024x900 display (1280x1024 recommended)
Internet	Internet connection and registration are necessary for required software activation, validation of subscriptions, and access to online services.*
Software	QuickTime 10.x software recommended

* NOTICE: Internet connection, Adobe ID, and acceptance of license agreement is required to activate and use this product. This product can integrate with or allow access to certain Adobe or third-party hosted online services. Adobe services are available only to users 13 and older. It requires agreement to more terms of use and the Adobe Privacy Policy. Applications and services cannot be available in all countries or languages. It can be subject to change or discontinuation without notice. Extra fees or membership charges can apply.

Language versions available for Animate CC

Deutsch

English

Español

Français

Italiano

Nederlands

Polish

Português (Brasil)

Svenska

Turkish

čeština

Русский

???

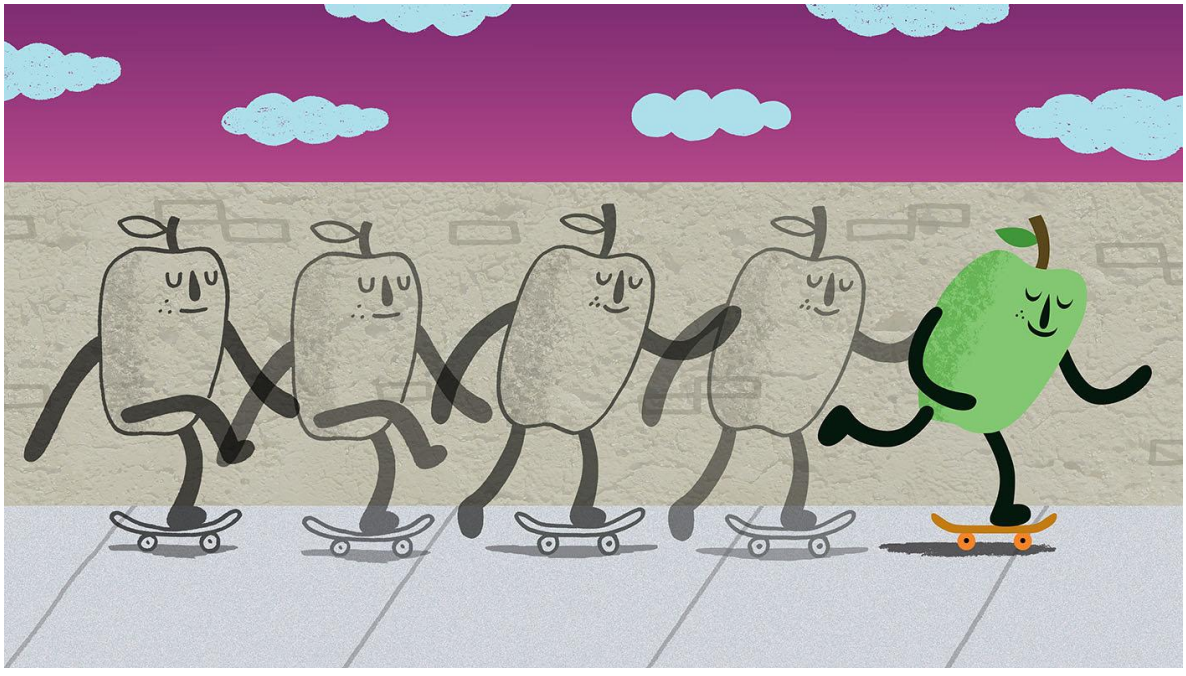
?????*

????*

???*

*Available for Windows only.

Create a 2D character animation



If you want to re-create this animation, save the 2D Animation assets to your own Creative Cloud account. Once in your Creative Cloud Libraries, you can access these assets from the CC Libraries panel in Animate CC.

Note: You need to be signed into your Creative Cloud account to save the library. Get an Adobe ID if you don't have one.

Publish content on multiple platforms

Adobe Flash Professional is now Animate CC. All the features and functionality shown can now be found in Animate.

Work with Multiple File Types in Animate CC

About Animate files

In Animate, you can work with a variety of file types, each of which has a separate purpose:

- **FLA files**, the primary files you work with in Animate, contain the basic media, timeline, and script information for a Animate document. Media objects are the graphic, text, sound, and video objects that comprise the content of your Animate document. The Timeline is where you tell Animate when specific media objects should appear on the Stage. You can add ActionScript® code to Animate documents to more finely control their behavior and to make them respond to user interactions.
- **Uncompressed XFL** files are similar to FLA files. An XFL file, and the other associated files inside the same folder, are simply the uncompressed equivalent of a FLA file. This format makes it easier for groups of users to work on different elements of an Animate project at the same time. For more information, see Working with uncompressed XFL files.
- **SWF files**, the compiled versions of FLA files, are the files you display in a web page. When you publish your FLA file, Animate creates a SWF file.

  The Animate SWF file format is an open standard that other applications support. For more information about Animate file formats, see www.adobe.com/go/flashplayer.
- **AS files** are ActionScript files—you can use these to keep some or all of your ActionScript code outside of your FLA files, which is helpful for code organization and for projects that have multiple people working on different parts of the Animate content.
- **SWC files** contain the reusable Animate components. Each SWC file contains a compiled movie clip, ActionScript code, and any other assets that the component requires. **Note**: SWC files cannot be imported into Animate.
- **ASC files** are files used to store ActionScript that will be executed on a computer running Adobe Media Server. These files provide the ability to implement server-side logic that works in conjunction with ActionScript in a SWF file. **Note**: ASC files are not supported with Animate CC.
- **JSFL files** are JavaScript files that you can use to add new functionality to the Animate authoring tool.
- **APR files** lets you bundle the canvas publish template along with its publish profile settings. Going forward, any new asset linked to a publish profile is bundled and shared as well. For more information, see Specify publish settings for Animate

What is Animate CC?

What is Animate CC?

The following additional videos and tutorials demonstrate working with Animate/Flash Pro. Some videos may show Flash CS3 or CS4, but are still applicable to Flash Pro CS5.

- Video: Working with FLA files (CS3) (6:00)
- Tutorial: Creating your first Flash CS5 document
- Video: Creating your first working, interactive FLA file (CS3) (7:51)

Working with other Adobe applications

Animate is designed to work with other Adobe® applications to enable a broad range of creative workflows. You can import Illustrator® and Photoshop® files directly into Animate. You can also create video from Animate and edit it in Adobe® Premiere® Pro or After Effects®, or import video from either of those applications into Animate. When publishing your SWF files, you can use Dreamweaver® to embed the content in your web pages and launch Animate directly from within Dreamweaver to edit the content.

Opening XFL files

Beginning with Animate CC, XFL is the internal format of the FLA files you create. When you save a file in Animate, the default format is FLA, but the internal format of the file is XFL.

Other Adobe® applications such as After Effects® can export files in XFL format. These files have the XFL file extension instead of the FLA extension. InDesign® can export directly in FLA format, which internally is XFL. This allows you to work on a project in After Effects or InDesign first and then continue working with it in Animate.

You can open and work with XFL files in Animate in the same way you would open an FLA file. When you open an XFL file in Animate, you can then save the file as a FLA file, or as an uncompressed XFL file.

The following video tutorials demonstrate exporting from InDesign and AfterEffects to Animate via XFL and FLA:

- Exporting from After Effects to Animate via XFL (2:43)

To open an XFL file in Animate:

1. In another Adobe® application, such as InDesign or After Effects, export your work as an XFL file.

   The application preserves all of the layers and objects of the original file in the XFL file.

2. In Animate, choose File > Open and navigate to the XFL file. Click Open.

   The XFL file opens in Animate in the same way as an FLA file. All of the layers of the original file appear in the Timeline and the original objects appear in the Library panel.

   You can now work with the file normally.

3. To save the file, choose File > Save.

   Animate prompts you to name the new FLA file in the Save As dialog box.

4. Type a name and save the FLA file.

Working with uncompressed XFL files

Beginning with Animate CC, you can choose to work with your Animate files in uncompressed XFL format. This format allows you to see each of the separate parts, or subfiles, that make up the Animate file. These parts include:

- An XML file that describes the Animate file as a whole.
- Separate XML files to describe each Library symbol.
- Additional XML files containing publish settings, mobile settings, and others.
- Folders containing external assets, such as bitmap files, used by the Animate file.

By working with uncompressed XFL format, you can allow each part of the Animate file to be worked on separately by different people. You can also use a source control system to manage the changes made to each subfile within your uncompressed XFL file. Together, these capabilities allow for much easier collaboration on larger projects with multiple designers and developers.

Using live update with XFL files

With live update of editable assets for Uncompressed XFL Documents, you can edit any Library asset from an uncompressed XFL document while the document is open in Animate. Your changes to the asset are reflected in Animate when you finish editing the asset in another application.

To edit an asset from an uncompressed XFL document in another application:

1. Save a Animate document in Uncompressed XFL format.
2. In an appropriate editor, such as Photoshop, open the asset you want to edit from the LIBRARY folder of the Uncompressed XFL Document.
3. Edit the asset and save your changes.
4. Return to Animate.

   The update to the asset is reflected in Animate immediately.

Edit a SWF file from Dreamweaver in Animate

If you have both Animate and Dreamweaver installed, you can select a SWF file in a Dreamweaver document and use Animate to edit it. Animate does not edit the SWF file directly; it edits the source document (FLA file) and re-exports the SWF file.

1. In Dreamweaver, open the Property inspector (Window > Properties).
2. In the Dreamweaver document, do one of the following:
   - Click the SWF file placeholder to select it; then in the Property inspector click Edit.
   - Right-click (Windows) or Control-click (Macintosh) the placeholder for the SWF file, and select Edit With Animate from the context menu.

     Dreamweaver switches the focus to Animate, and Animate attempts to locate the Animate authoring file (FLA) for the selected SWF file. If Animate cannot locate the Animate authoring file, you are prompted to locate it.

     Note: If the FLA file or SWF file is locked, check out the file in Dreamweaver.
3. In Animate, edit the FLA file. The Animate Document window indicates that you are modifying the file from within Dreamweaver.
4. When you finish making edits, click Done.

   Animate updates the FLA file, re-exports it as a SWF file, closes, and then returns the focus to the Dreamweaver document.

   Note:

   To update the SWF file and keep Animate open, in Animate select File > Update for Dreamweaver.
5. To view the updated file in the document, click Play in the Dreamweaver Property inspector or press F12 to preview your page in a browser window.

1. Start Animate.
2. On the main Animate screen, select Create New > Animate File (Mobile).
3. In Device Central, select a Player version and ActionScript version.
4. Select a content type.
5. In the Available Devices list, select a single target device or multiple devices (or select a set or individual device in the Device Sets list).

6 Click Create.

7 Add content to the new Animate document.

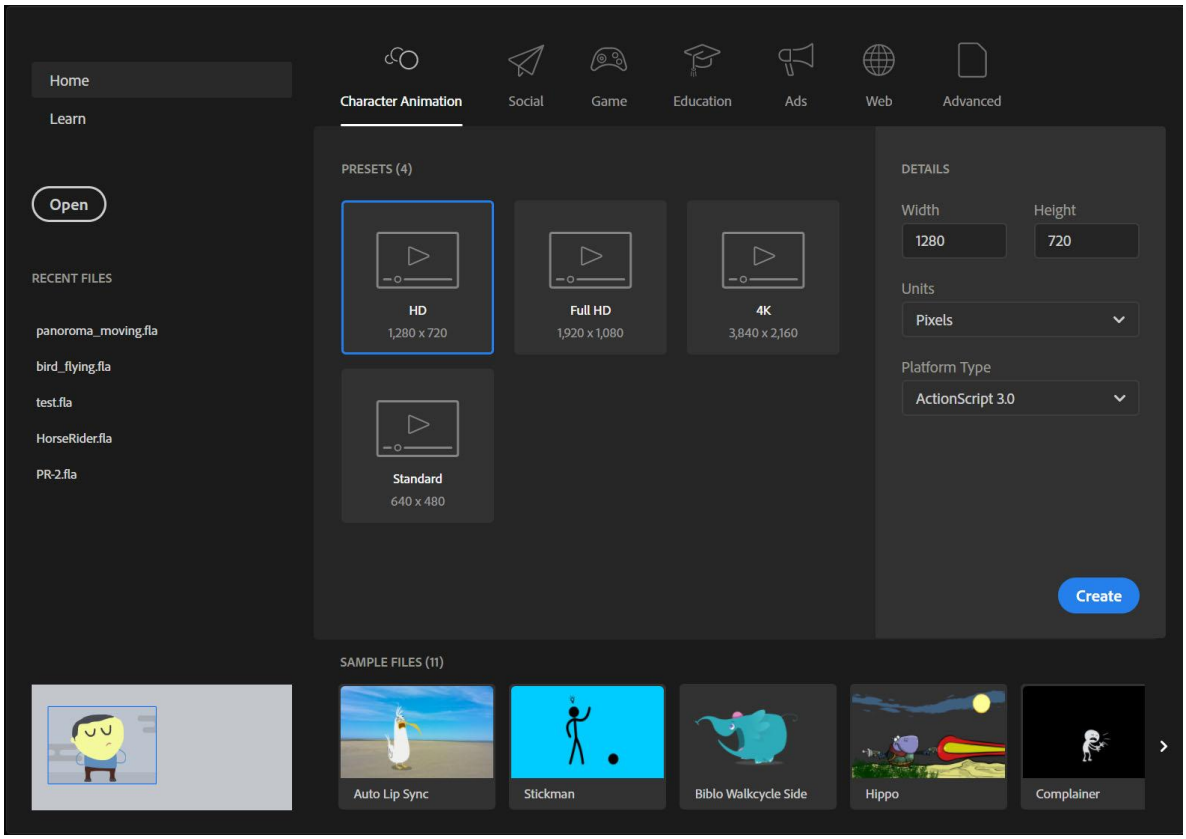
8 To test the document, select Control > Test.

Create a new document

You can create a new document or open a previously saved document in Animate, and you can open a new window as you work. You can set properties for new or existing documents.

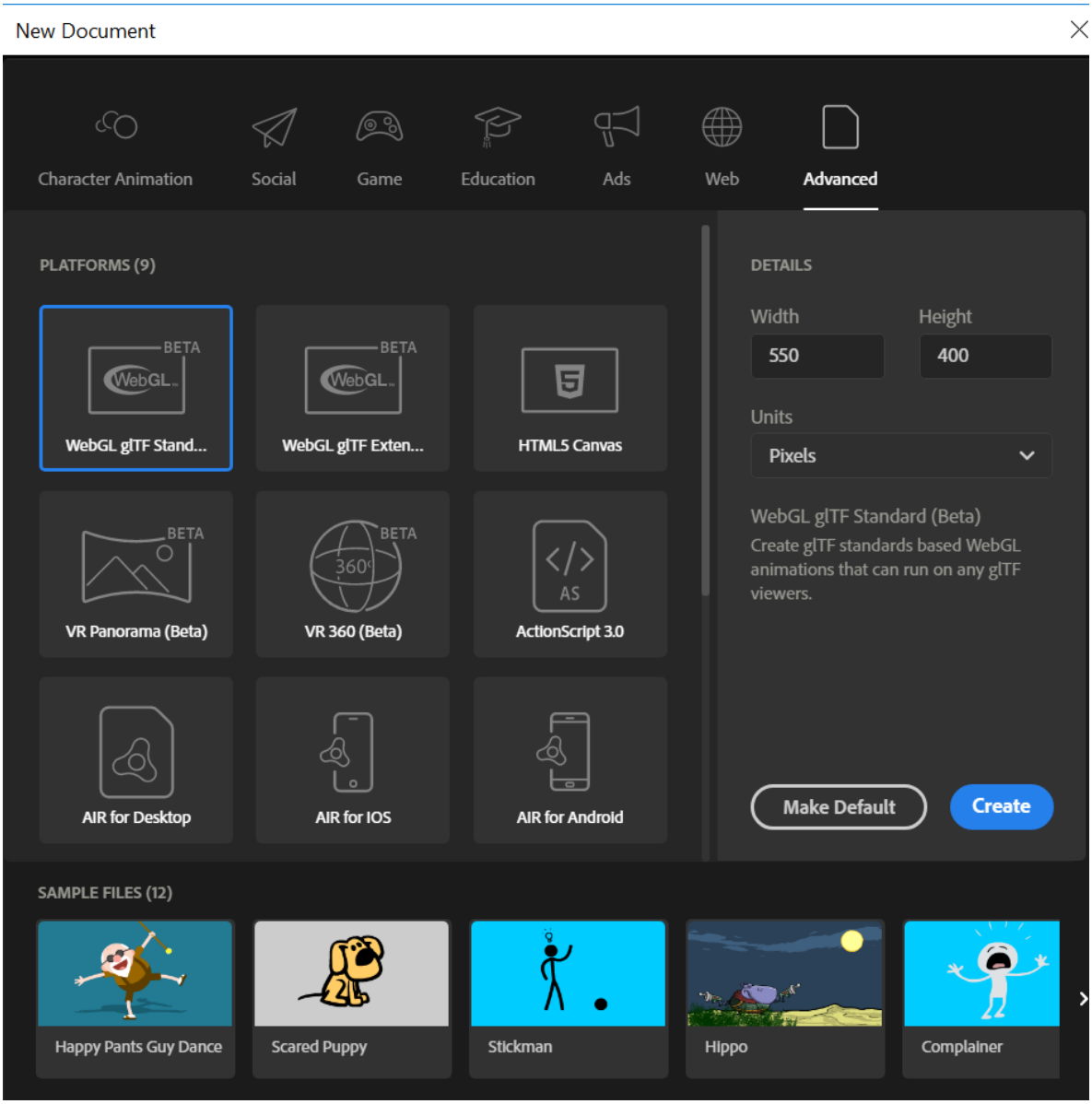
You can choose the destination for an animation using any of the intents, Animate provides you the preset formats. Choose an intent of your choice from the tabs at the top of the screen such as Character Animation, Social, Game, Education, Ads, Web, and Advanced.

Select the appropriate presets for each of the intents and click **Create** to start creating animations. You can view the recently used assets in the left pane. Sample assets are provided at the bottom of the startup screen.



Creating a new document

1 Select **File** > **New**.



New Document

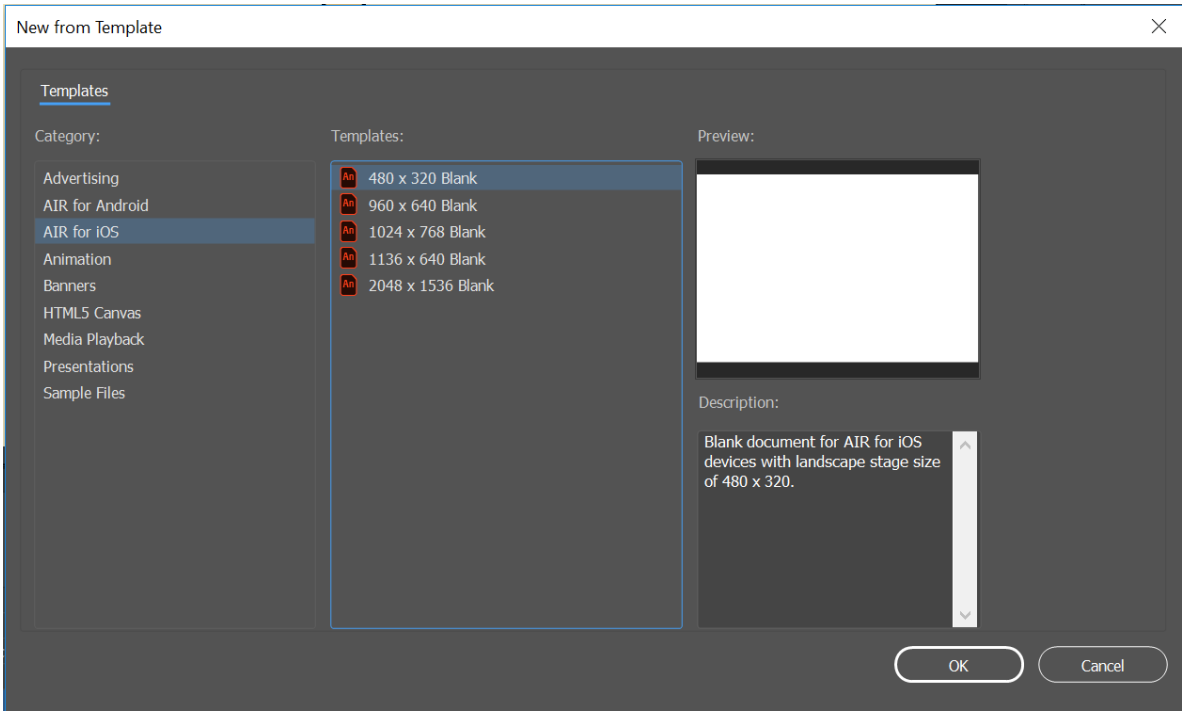
2 Choose an intent of your choice from the tabs at the top of the screen such as Character Animation, Social, Game, Education, Ads, Web, and Advanced.

3 Select the appropriate presets for each of the intents and click **Create.**

You can also choose settings for the document. See Set properties for a new or existing document.

Create a new document from a template

1 Select **File > New from Template**.



New from Template dialog

2 Select a category from the Category list, select a document from the Category Items list, and click **OK**. You can select standard templates that come with Animate or a template you have already saved.

Open an existing document

1 Select **File > Open**.

2 In the Open dialog box, navigate to the file or enter the path to the file in the Go To box.

3 Click Open.

View a document when multiple documents are open

When you open multiple documents, tabs at the top of the Document window identify the open documents and let you easily navigate among them. Tabs appear only when documents are maximized in the Document window.

? Click the tab of the document you want to view.

By default, tabs appear in the order in which the documents were created. You can drag the document tabs to change their order.

Open a new window for the current document

? Select Window > Duplicate Window.

Set properties for a new or existing document

1 With the document open, select Modify > Document.

The Document Settings dialog box appears.

2 To set the Dimensions of the Stage do one of the following:

- To specify the Stage size in pixels, enter values in the Width and Height boxes. The minimum size is 1 x 1 pixels; the maximum is 2880 x 2880 pixels.
- To match the Stage size to the exact amount of space used by the contents of the Stage, select the Match Contents option.
- To set the Stage size to the maximum available print area, select Match Printer. This area is determined by the paper size minus the current margin selected in the Margins area of the Page Setup dialog box (Windows) or the Print Margins dialog box (Macintosh).
- To set the Stage size to the default size, 550 x 400 pixels, select Match Default.

3 To adjust the position and orientation of 3D objects on the Stage to maintain their appearance relative to the edges of the Stage, select Adjust 3D Perspective Angle to Preserve Current Stage Projection.

This option is only available if you change the Stage size.

4 (CS5.5 only) To automatically scale the contents of the stage relative to the change in Stage size, select Scale Content With Stage.

This option is only available if you change the Stage size. You can choose whether to scale content in locked and hidden layers in the Preferences. For more information, see Set General preferences.

5 To specify the unit of measure for rulers displayed in the work area, select an option from the Ruler Units menu. (This setting also determines the units used in the Info panel.)

6 To set the background color of your document, click the Background Color swatch and select a color from the palette.

7 For Frame Rate, enter the number of animation frames to appear every second.

For most computer-displayed animations, especially those playing from a website, 8 frames per second (fps) to 15 fps is sufficient. When you change the frame rate, the new frame rate becomes the default for new documents.

8 (CS5.5 only) To automatically save the document at a specified time interval, select the Auto-Save option and specify a number of minutes between saves.

9 Do one of the following:

- To apply the new settings to the current document only, click OK.
- To make the new settings the default properties for all new documents, click Make Default.

Change document properties using the Property inspector

1 Click in the work area outside the Stage to deselect all objects on the Stage. The document properties appear in the Property inspector. To open the Property inspector, choose (Window > Properties).

2 (CS5.5 only) In the Publish section, choose a Flash Player version and an ActionScript version for your document. To access additional Publish settings, click the Publish Settings button. For more information, see Publish settings.

3 In the Properties section, for FPS (frames per second), enter the number of animation frames to play each second.

4 To change the Stage size, enter values for the width and height of the Stage.

5 To select a background color for the Stage , click the color swatch next to the Stage property and select a color from the palette.

6 To edit additional document properties, click the Edit button next to the Size properties. For more information on all document properties, see Set properties for a new or existing document.

Add XMP metadata to a document

You can include Extensible Metadata Platform (XMP) data such as title, author, description, copyright, and more in your FLA files. XMP is a metadata format that certain other Adobe® applications can understand. The metadata is viewable in Animate and in Adobe® Bridge. For more information about XMP metadata, see Metadata and Keywords in Bridge Help.

Note: 32-bit Bridge is not supported with Adobe Animate CC.

Embedding metadata improves the ability of web-based search engines to return meaningful search results for Animate content. The search metadata is based on the XMP (Extensible Metadata Platform) specifications and is stored in the FLA file in a W3C-compliant format.

A file's metadata contains information about the contents, copyright status, origin, and history of the file. In the File Info dialog box, you can view and edit the metadata for the current file.

Depending on the selected file, the following types of metadata may appear:

Description Contains author, title, copyright, and other information.

IPTC Displays editable metadata. You can add captions to your files, as well as copyright information. IPTC Core is a specification that was approved by the IPTC (International Press Telecommunications Council) in October 2004. It differs from the older IPTC (IIM, legacy) in that new properties were added, some property names were changed, and some properties were deleted.

Camera Data (Exif) Displays information assigned by digital cameras, including the camera settings used when the image was taken.

Video Data Displays metadata for video files, including pixel aspect ratio, scene, and shot.

Audio Data Displays metadata for audio files, including artist, album, track number, and genre.

Mobile SWF Lists information about SWF files, including title, author, description, and copyright.

History Keeps a log of changes made to images with Photoshop.

Note: The History Log preference must be turned on in Photoshop for the log to be saved with the file's metadata.

Version Cue Lists any Version Cue file-version information.

DICOM Displays information about images saved in the Digital Imaging and Communications in Medicine (DICOM) format.

To add metadata:

1. Choose File > File Info.
2. In the File Info dialog box that appears, enter the metadata that you want to include. You can add or remove metadata in the FLA file at any time.

Save Animate documents

You can save a Animate FLA document using its current name and location or using a different name or location.

When a document contains unsaved changes, an asterisk (*) appears after the document name in the document title bar, the application title bar, and the document tab. When you save the document, the asterisk is removed.

Save a Animate document in the default FLA format

1. Do one of the following:
   - To overwrite the current version on the disk, select File > Save.

- To save the document in a different location and/or with a different name, or to compress the document, select File > Save As.

2 If you selected Save As, or if the document has never been saved before, enter the filename and location.

3 Click Save.

Save a document in uncompressed XFL format

1 Choose File > Save As.

2 From the Save as Type menu, choose Animate CC Uncompressed Document (*xfl).

3 Choose a name and location for the file and click Save.

Revert to the last saved version of a document

? Select File > Revert.

Save a document as a template

1 Select File > Save As Template.

2 In the Save As Template dialog box, enter a name for the template in the Name box.

3 Select a category from the Category pop-up menu, or enter a name to create a new category.

4 Enter a description of the template in the Description box (up to 255 characters), and click OK.

The description appears when the template is selected in the New Document dialog box.

To delete a saved template, navigate to one of the following folders and delete the template FLA file from the category folder that contains it.

- Windows XP - C:\Documents and Settings\<userName>\Local Settings\Application Data\Adobe\Flash CS5\en_US\Configuration\Templates\
- Windows Vista and 7 - C:\Users\<userName>\AppData\Local\Adobe\Flash CS5\<language>\Configuration\Templates\
- Mac OS - <HardDisk>/Users/<userName>/Library/Application Support/Adobe/Flash CS5/<language>/Configuration/Templates/

Save a document as a Animate CC document

1 Select File > Save As.

2 Enter the filename and location.

3 Select Animate CC Document from the Format pop-up menu, and click Save.

Note:

If an alert message indicates that content will be deleted if you save in Animate CC format, click Save As Animate CC to continue. This might happen if your document contains features that are available only in Animate CC. Animate does not preserve these features when you save the document in Animate CC.

Save documents when quitting Animate

1 Select File > Exit (Windows) or Animate > Quit Animate (Macintosh).

2 If you have documents open with unsaved changes, Animate prompts you to save or discard the changes for each document.

- Click Yes to save the changes and close the document.
- Click No to close the document without saving the changes.

Printing Animate documents (deprecated with Flash Professional CC)

Print from Animate documents

To preview and edit your documents, print frames from Adobe Animate documents, or specify frames to be printable from Flash Player by a viewer.

When printing frames from a Animate document, use the Print dialog box to specify the range of scenes or frames to print and the number of copies. In Windows, the Page Setup dialog box specifies paper size, orientation, and various print options—including margin settings and whether all frames are to be printed for each page. On the Macintosh, these options are divided between the Page Setup and the Print Margins dialog boxes.

The Print and Page Setup dialog boxes are standard in either operating system, and their appearance depends on the selected printer driver.

1 Select File > Page Setup (Windows) or File > Print Margins (Macintosh).

2 Set page margins. Select both Center options to print the frame in the center of the page.

3 In the Frames menu, select whether to print all frames in the document or only the first frame of each scene.

4 In the Layout menu, select from the following options:

Actual Size Prints the frame at full size. Enter a value for Scale to reduce or enlarge the printed frame.

Fit On One Page Reduces or enlarges each frame so it fills the print area of the page.

Storyboard Prints several thumbnails on one page. Select from Boxes, Grid, or Blank. Enter the number of thumbnails per page in the Frames box. Set the space between the thumbnails in the Frame Margin box, and select Label Frames to print the frame label as a thumbnail.

5 To print frames, select File > Print.

Use frame labels to disable printing

To choose not to print any of the frames in the main Timeline, label a frame as *!#p* to make the entire SWF file nonprintable. Labeling a frame as *!#p* dims the Print command in the Flash Player context menu. You can also remove the Flash Player context menu.

If you disable printing from Flash Player, the user can still use the browser Print command to print frames. Because this command is a browser feature, you cannot use Animate to control or disable it.

Disable printing in the Flash Player context menu

1 Open or make active the Animate document (FLA file) to publish.

2 Select the first keyframe in the main Timeline.

3 Select Window > Properties to view the Property inspector.

4 In the Property inspector, for Frame Label enter *!#p* to specify the frame as non-printing.

Specify only one *!#p* label to dim the Print command in the context menu.

Note:

You can also select a blank frame (rather than a keyframe) and label it #p.

Disable printing by removing the Flash Player context menu

1. Open or make active the Animate document (FLA file) to publish.
2. Select File > Publish Settings.
3. Select the HTML tab and deselect Display Menu and click OK.

Specify a print area when printing frames

1. Open the Animate document (FLA file) containing the frames you will set to print.
2. Select a frame that you have not specified to print with a *#p* frame label that is on the same layer as a frame that is labeled with a *#p*.

   To organize your work, select the next frame after a frame labeled *#p*.
3. Create a shape on the Stage the size of the desired print area. To use a frame's bounding box, select a frame with any object of the appropriate print area size.
4. Select the frame in the Timeline that contains the shape to use for the bounding box.
5. In the Property inspector (Window > Properties), enter *#b* for Frame Label to specify the selected shape as the bounding box for the print area.

   Only one *#b* frame label per Timeline is allowed. This option is the same as selecting the Movie bounding box option with the Print action.

Change the printed background color

You can print the background color set in the Document Properties dialog box. Change the background color for only the frames to be printed by placing a colored object on the lowest layer of the Timeline being printed.

1. Place a filled shape that covers the Stage on the lowest layer of the Timeline that will print.
2. Select the shape and select Modify > Document. Select a color for the printing background.

   This action changes the entire document's background color, including that of movie clips and loaded SWF files.
3. Do one of the following:
   - To print that color as the document's background, designate to print the frame in which you placed the shape.
   - To maintain a different background color for non-printing frames, repeat steps 2 and 3. Then place the shape on the lowest layer of the Timeline, in all the frames that are not designated to print.

Print from the Flash Player context menu

Use the Print command in the Flash Player context menu to print frames from any Animate SWF file.

The context menu's Print command cannot print transparency or color effects and cannot print frames from other movie clips; for more advanced printing capabilities, use the *PrintJob* object or the *print()* function.

1. Open the document.

   The command prints the frames labeled *#p* by using the Stage for the print area or the specified bounding box.

   If you haven't designated specific frames to print, all frames in the document main Timeline print.
2. Select File > Publish Preview > Default or press F12 to view your Animate content in a browser.

3 Right-click (Windows) or Control-click (Macintosh) in the Animate content in the browser window to display the Flash Player context menu.

4 Select Print from the Flash Player context menu to display the Print dialog box.

5 In Windows, select the print range to select which frames to print.

6 On the Macintosh, in the Print dialog box, select the pages to print.

7 Select other print options, according to your printer's properties.

8 Click OK (Windows) or Print (Macintosh).

Note:

Printing from the context menu does not interact with calls to the PrintJob object.

Chapter 2: Animation and Interactivity

Working with Motion tweens saved as XML files

Animate allows you to work with Motion Tweens as XML files. Natively, Animate allows you to apply the following commands on any Motion Tween:

- Copy Motion as XML
- Export Motion as XML
- Import Motion as XML

Copy Motion as XML

Allows you to copy Motion properties applied to any object on the Stage at a said frame.

1. Create a Motion Tween.
2. Select any keyframe on the Timeline.
3. Go to Commands > Copy Motion as XML.

The Motion property is copied to the clipboard as XML data, you can then use any text editor to work on the XML file.

See also

Using property keyframes

Creating and applying motion presets

Motion tween and ActionScript 3.0

Creating a motion tween animation

Editing the motion path of a tween animation

Manipulating motion tweens

Export Motion as XML

Allows you to export Motion properties applied to any object on the stage to an XML file that can be saved.

1. Create a Motion Tween.
2. Go to Commands > Export Motion as XML.
3. Browse to a suitable location where you want to save the file.
4. Provide a name for the XML file, and click Save.

The Motion tween is exported as an XML file at the specified location.

Import Motion as XML

Allows you to import an existing XML file that has Motion properties defined.

1. Select an Object any object on the Stage.
2. Go to Commands > Import Motion as XML.
3. Browse to the location, and select the XML file. Click Ok.
4. On the Paste Motion Special dialog, select the properties that you want to apply on the selected object.
5. Click Ok.

Shape tweening

In shape tweening, you draw a vector shape at one specific frame in the **Timeline**. And, change that shape or draw another shape at another specific frame. Animate then interpolates the intermediate shapes for the frames in between, creating the animation of one shape morphing into another.

Animate allows you to add shape tweens to uniform solid strokes and non-uniform fancy strokes. You can also add shape tweens to strokes enhanced using the variable width tool. Experiment with the shapes you want to use to determine the results. You can use shape hints to tell Animate which points on the beginning shape correspond to specific points on the end shape.

You can also tween the position and color of shapes within a shape tween.

To apply shape tweening to groups, instances, or bitmap images, break these elements apart. To apply shape tweening to text, break the text apart twice to convert the text to objects. See Break apart a symbol instance.

Creating a shape tween

The following steps show how to create a shape tween from frame 1 to frame 30 of the timeline. However, you can create tweens in any part of the timeline that you choose.

1. In frame 1, draw a square with the Rectangle tool.
2. Select frame 30 of the same layer and add a blank keyframe by choosing **Insert** > **Timeline** > **Blank Keyframe** or pressing **F7**.
3. On the stage, draw a circle with the oval tool in frame 30.

   Now, you have a keyframe in frame 1 with a square and a keyframe in frame 30 with a circle.
4. In the **Timeline**, select one of the frames in between the two keyframes in the layer containing the two shapes.
5. Choose **Insert** > **Shape Tween**.

   Animate interpolates the shapes in all the frames between the two keyframes.
6. To preview the tween, scrub the playhead across the frames in the **Timeline**, or press the **Enter** key.
7. To tween motion in addition to shape, move the shape in frame 30 to different location from frame 1.

   Preview the animation by pressing the **Enter** key.
8. To tween the color of the shape, make the shape in frame 1 a different color from the shape in frame 30.
9. To add easing to the tween, select one of the frames and enter a value in the **Ease** field of the Property inspector.

   To ease the beginning of the tween, enter a negative value. To ease the end of the tween, enter a positive value.

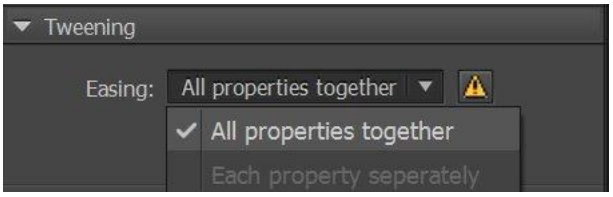
Creating ease presets or custom eases

Ease presets are pre-configured eases that can be applied to an object on the stage.

A set of commonly used ease presets are available for shape tween. You can select the preset from a list of ease presets and apply it to the selected property. You can also apply a custom ease to a shape tween.

1 Click the layer that contains a shape tween in the timeline of Animate.

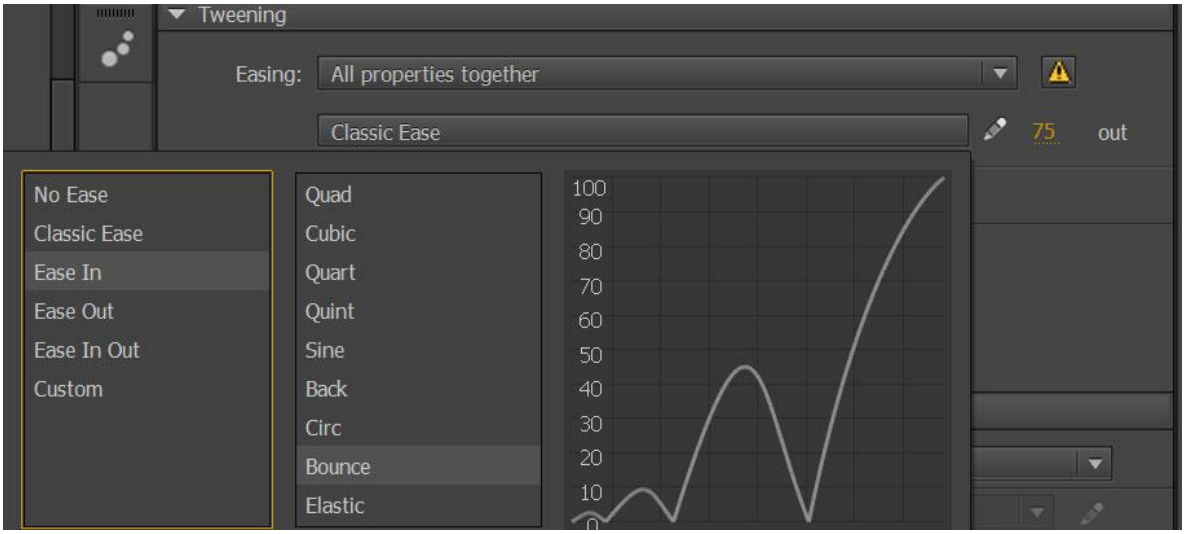
2 To open the tweening properties, click the **Tweening** category in the property panel.



Tweening properties

3 Select the ease preset of your choice from the ease type pop-up dialog. Double-click the preset type to apply.

If you choose to apply classic ease, you can also increase or decrease the intensity of ease by moving the slider.

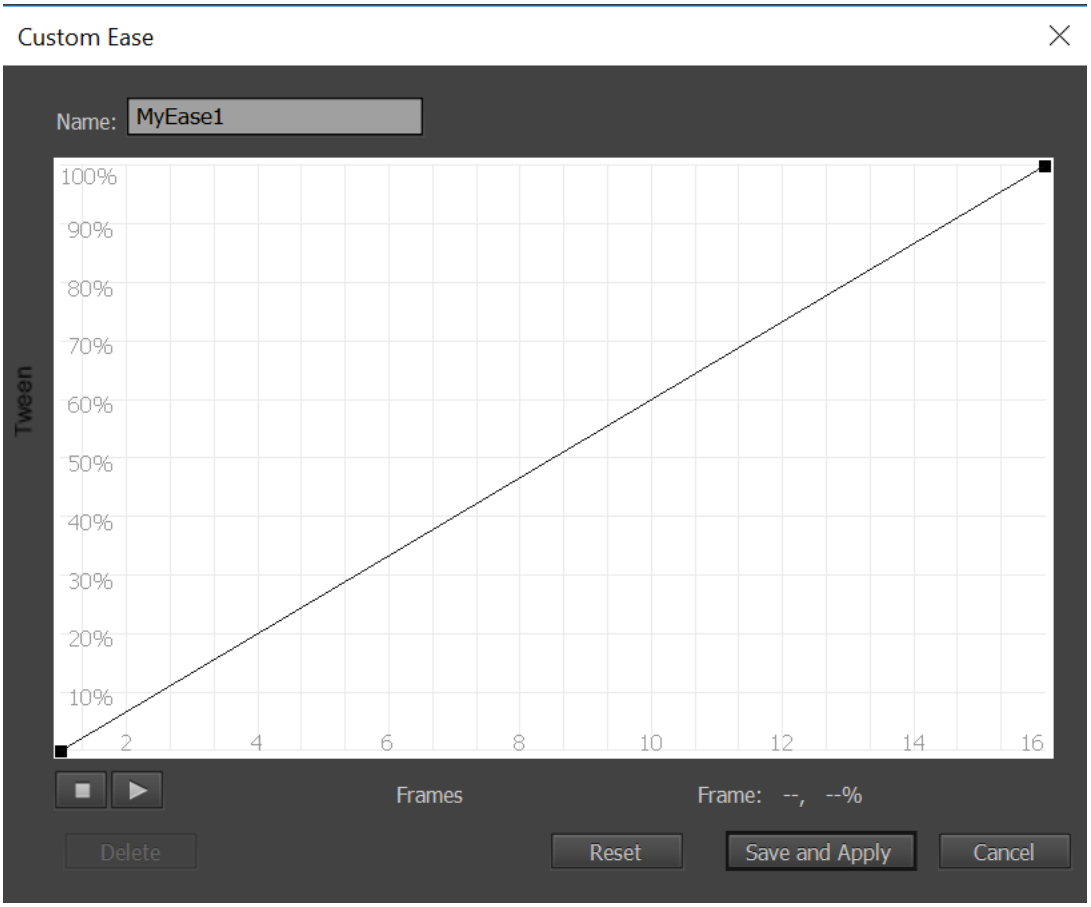


Types of easing presets

4 Click the edit icon next to **Ease** to apply a custom ease.

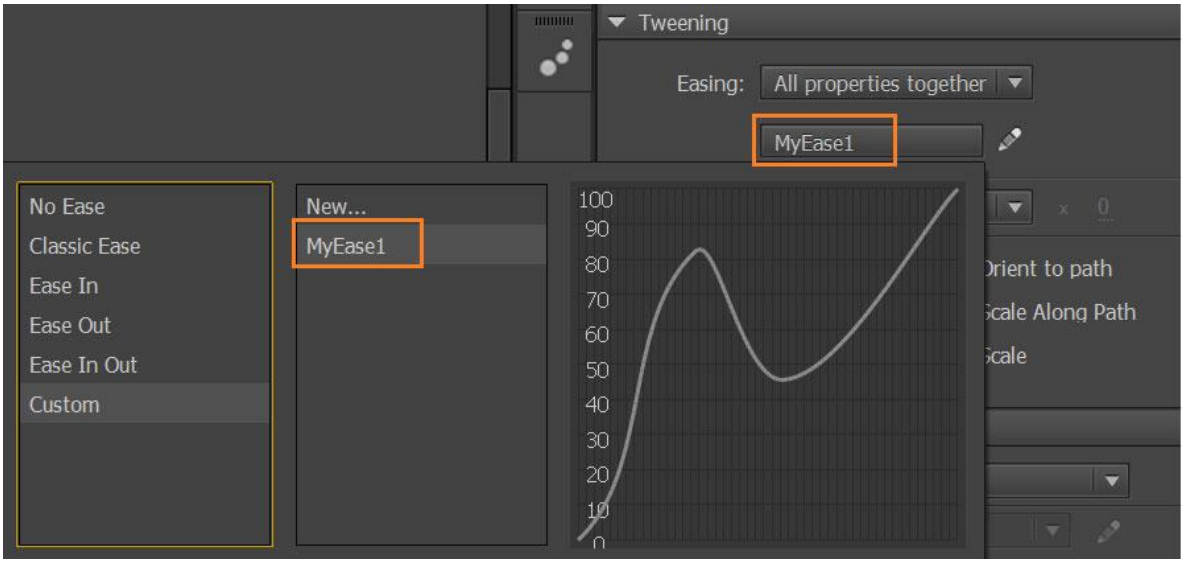
The **Custom Ease** dialog displays a graph representing the degree of motion over time. The horizontal axis represents frames, and the vertical axis represents percentage of change. The first keyframe is represented as 0%, and the last keyframe is represented as 100%.

The slope of the graph's curve represents the rate of change of the object. When the curve is horizontal (no slope), the velocity is zero; when the curve is vertical, an instantaneous rate of change occurs.



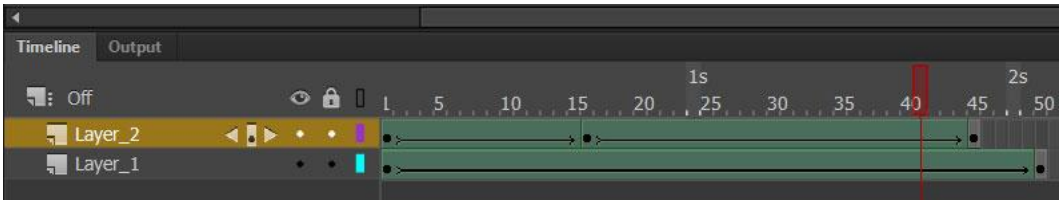
Custom Ease graph showing constant velocity. Open this dialog by selecting a frame in a shape tween and clicking the Edit button in the Ease section of the Property inspector.

You can save a custom ease and reuse it by choosing your customized ease from the **Custom** list. Click the **Save and Apply** button in edit mode after making the changes. In the following screenshot, you can find the customized ease preset with the name **MyEase1**.



Customized easing preset

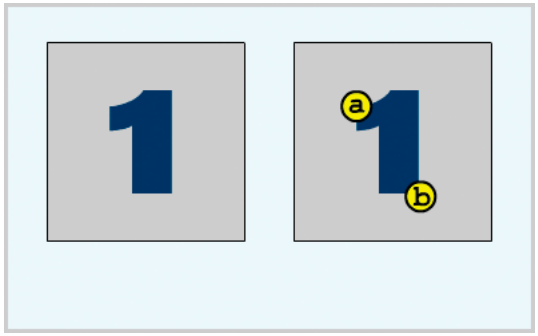
You can use the preset eases across multiple spans in the timeline by selecting the corresponding spans and applying the ease.



Apply easing preset for multiple spans

Controlling shape changes with shape hints

To control more complex or improbable shape changes, you can use shape hints. Shape hints identify points that correspond in starting and ending shapes. For example, if you are tweening a drawing of a face as it changes expression, you can use a shape hint to mark each eye. Then, instead of the face becoming an amorphous tangle while the shape change takes place, each eye remains recognizable and changes separately during the shift.



Shape hints as letters

Shape hints contain letters (a through z) for identifying which points correspond in the starting and ending shapes. You can use up to 26 shape hints.

Shape hints are yellow in a starting keyframe, green in an ending keyframe, and red when not on a curve.

For best results when tweening shapes, follow these guidelines:

- In complex shape tweening, create intermediate shapes and tween them instead of just defining a starting and ending shape.
- Make sure that shape hints are logical. For example, if you are using three shape hints for a triangle, they must be in the same order on the original triangle and tween triangle. The order cannot be a,b,c in the first keyframe and a,c,b in the second.
- Shape hints work best if you place them in counterclockwise order beginning at the upper-left corner of the shape.

Use shape hints

1. Select the first keyframe in a shape-tweened sequence.
2. Select **Modify > Shape > Add Shape Hint**. The beginning shape hint appears as a red circle with the letter a somewhere on the shape.
3. Move the shape hint to a point to mark.
4. Select the last keyframe in the tweening sequence. The ending shape hint appears as a green circle with the letter a somewhere on the shape.
5. Move the shape hint to the point in the ending shape that corresponds to the first point you marked.
6. To view how the shape hints change the shape tweening, play the animation again. To fine-tune the tweening, move the shape hints.
7. To add more shape hints, repeat this process. New hints appear with the letters that follow (b, c, and so on).

View all shape hints

? Select **View > Show Shape** Hints. The layer and keyframe that contain shape hints must be active for **Show Shape Hints** to be available.

Remove a shape hint

? Drag it off the stage.

Remove all shape hints

? Select **Modify > Shape > Remove All Hints**.

Adding shape tween to strokes with variable width

Animate CC allows you to add shape-tween to strokes with variable width. Earlier, Animate only supported creating shape tweens for solid uniform strokes and shapes. This limited designers from creating shape tweens for non-uniform strokes, such as strokes enhanced using the variable width tool. Tweening strokes with variable width greatly expands the design possibilities within Animate CC.

Adding shape tweens to fancy strokes is not different from tweening a shape or a solid uniform stroke. The workflow needs that you define the start and final shape of the tween, and Animate creates the transitional frames of the tween.

About variable width tool

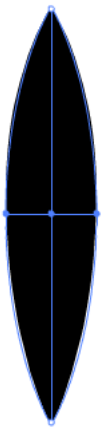
Variable width tool allows you to enhance uniform solid strokes to create beautiful and fancy strokes. For information on how to enhance strokes using the variable width tool, see Enhancing strokes and shapes using the Variable Width tool.

Adding shape tween to variable width strokes

1 In Animate CC, draw a line using the **Line** tool.

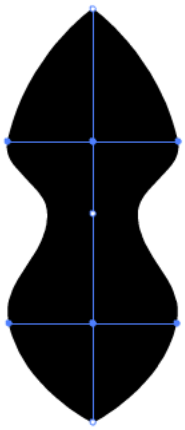
A line stroke drawn using the Line tool on Stage with Stroke value set to two pixels.

2 Use the **Variable Width** tool to add width at the middle of the stroke (see below figure). For information on using variable width tool, see Enhancing strokes using Variable Width Tool.



Variable Width Stroke created using the Variable Width Tool with Stroke value set to 68.0 pixels.

3 Select another frame on the timeline, for example frame 30, and create the final shape of the stroke for your tween.



Final shape added to the last keyframe of the shape tween.

4 Right-click any frame between 1 to 30, and select **Create Shape Tween**.

Adding shape tweens to variable width profiles

Animate CC also allows you to add shape tweens to fancy strokes saved as variable width profiles. You can apply width profiles to the start and final shapes of a tween, and allow Animate to create a smooth shape tween.

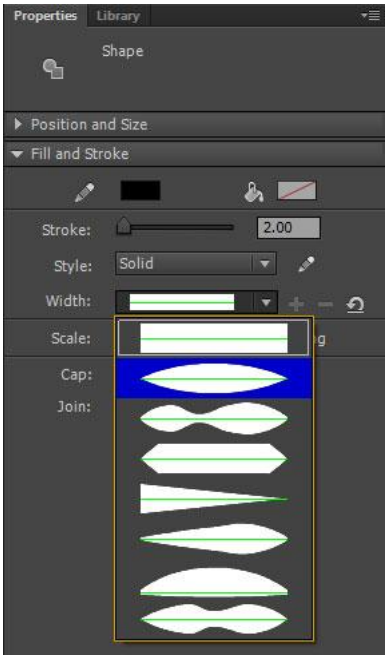
Width profiles are fancy strokes that are created and saved using variable width tool for easy reuse. For more information about width profiles, see Saving Width Profiles.

To add shape tweens to variable width profiles, do the following:

1 In Animate CC, draw a line on stage using the **Line** tool.

A line stroke drawn using the line tool on stage with stroke value set to two pixels.

2 On the Property inspector, select and apply a width profile from the **Width** drop-down.



Variable Width Stroke created using the Variable Width Tool with Stroke value set to 68.0 pixels.

3 Select another frame on the timeline, for example frame 30, and select a desired width profile from the width drop-down on Property inspector.

4 To add shape tween to the selected width profiles, right-click on any frame between 1 to 30, and select **Create Shape Tween.**

Creating custom HTML5 Components

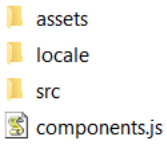
Animate CC ships with a set of default components. However, these are insufficient for your project. This topic helps you understand how to create custom HTML5 Components for Animate CC.

A component definition consists of three major parts:

- **Metadata:** Provides information about the component such as display name, version, set of configurable properties, icon, and so on. This is captured in a file called components.js. You can group the components as a category and this file allows you to provide the meta-data for all components in a category.
- **Source:** Provides information about the actual component source. This is embedded at runtime when you preview or publish a movie using components.
- **Assets:** Provides information about any runtime dependency such as like JavaScript library or CSS or runtime assets and icons. The assets can be used in the Animate authoring environment.

Note:

A component definition also has localization-related resources.



Sample folder configuration for a custom component category

Animate CC checks the following folders for any custom HTML5 Components and loads them on launch:

• **Windows:** <AppData>/Local/Adobe/Adobe Animate CC 2017/en_US/Configuration/HTML5Components

• **MAC:**

~/Library/Application Support/Adobe/Animate CC 2017/en_US/Configuration/HTML5Components/

Note:

The above folder path is applicable for US English. If you are using Animate in any other language, look for your language specific folder name replacing en_US.

For each folder within the location that contains the file **'components.js'**, Animate CC creates a category, and loads all the components within.

Component Metadata

The metadata of the Component is captured in a file called **components.js** which is placed inside a separate folder within **HTML5Components** directory.

```
{
    "category": "CATEGORY_VIDEO",
    "components": [{
            "className": "an.Video",
            "displayName": "DISP_NAME_VIDEO",
            "version": "1.0",
            "source": "src/video.js",
            "icon": "assets/SP_FLVPlayback_Sm",
            "dimensions": [400, 300],
            "dependencies": [
                {"src": "../lib/jquery-2.2.4.min.js", "cdn": "https://code.jquery.com/jquery-2.2.4.min.js"},
                {"src": "../sdk/anwidget.js"}
            ],
            "properties": [
                {"name": "PROP_SOURCE", "variable": "src", "type": "Video Content Path", "default": ""},
                {"name": "PROP_AUTOPLAY", "variable": "autoplay", "type": "Boolean", "default": "true"},
                {"name": "PROP_CONTROLS", "variable": "controls", "type": "Boolean", "default": "true"},
                {"name": "PROP_LOOP", "variable": "loop", "type": "Boolean", "default": "true"},
                {"name": "PROP_PRELOAD", "variable": "preload", "type": "Boolean", "default": "true"},
                {"name": "PROP_CLASS", "variable": "class", "type": "String", "default": "video"}
            ]
        }]
}
```

Sample metadata for a video component.

Components.js

Components.js is a JSON file that contains the following sections:

- **Category**: Name in the Components Panel for this set of components and can be localized.

- **Components**: Array where each entry contains the metadata about a component. The above sample has only one element in the array. The metadata has following sections:

Name	Required	Description
ClassName	Yes	Class name of the component specified in the source file. The class name supports one level of namespaces. For example, Video.
Version	No	Version number of the component. This is used for future component upgrades. However, the flow is not defined at this point of time.
Source	Yes	Relative path of the component's main source file. More details are provided on what does the source contain in the next section.
Icon	No	Relative path for the icon for the component. This icon is used in the components panel and on stage when any instance is created for the component along with its name. If none is provided a default icon will be used. You can specify the png name of the icon to be loaded (typically 32x32). Or else, if you want to support different icons for light UI and dark UI then provide two .pngs with the following naming convention: custom_icon_**N.png** – Icon for dark UI custom_icon_**D.png** – Icon for light UI and just specify the name 'custom_icon' as the value for this field. The suffixes are automatically appended based on the current user setting.

Dimensions	No	Default size for the component instances. Whenever user drags and drops a component from Component panel to stage, a new instance is created. This field specifies the default initial size for the component instance. The value should be an array [width, height]. If there is no value specified, then Animate picks up a default size. Also Animate restricts the size to be within [2,2] to [1000, 1000] range.
Dependencies	No	The set of dependencies for the component. This is an array where each entry provides the relative path for a local source (with key = "src") and CDN path (with key='cdn'). The CDN path is not mandatory. This path is used when you use hosted libraries in the publish settings. Otherwise the local source will be used when you preview or publish. Do note the relative path used in the example above (video). Its loading the dependencies from one level above, which allows us to share some dependencies across multiple component sets.

Properties	Yes	This is an array of properties. When you create any instance of this component on stage, the set of properties configured here will be automatically shown in the PI. Users of this component can configure those properties in Animate CC and the configured properties are made available during instantiation of the component at runtime. Each property entry contains the following keys: 1 **name:** The name shown in the PI for this property. This should be a user-friendly name. This can be localized. 2 **variable:** The internal name used for this property. The configured values will be available with this variable name at runtime. More details on this will be covered in later sections. 3 **Type:** This specified the type of the property. Animate CC allows the following types: 1 **Boolean** - Checkbox in PI 2 **Number** - Numeric box in PI 3 **String** - Text box in PI 4 **List** - Allows user to configure an array of values. 5 **Collection**- Allows the users to configure a list of <key, value> pairs. (See combo box) 6 **File Path** - Allows the user to browse and select any local file. The string value is supplied at runtime. The file is automatically copied in the published output in '**assets**' folder and the relative path is made available at runtime. 7 **Image Path** - Allows the user to browse and select any image. The file is automatically copied in the published output in the configured images folder and the relative path is made available at runtime. 8 **Video Content Path** – Allows the user to browse and select any web format video source (mp4, ogg, ogv, webm). The configured asset is copied to

Component Source

Each component should have a source file associated which provides code to handle the following:

- Creation of component instance at runtime with configured set of property values
- Attaching and Detaching to the DOM.
- Property updates in every frame

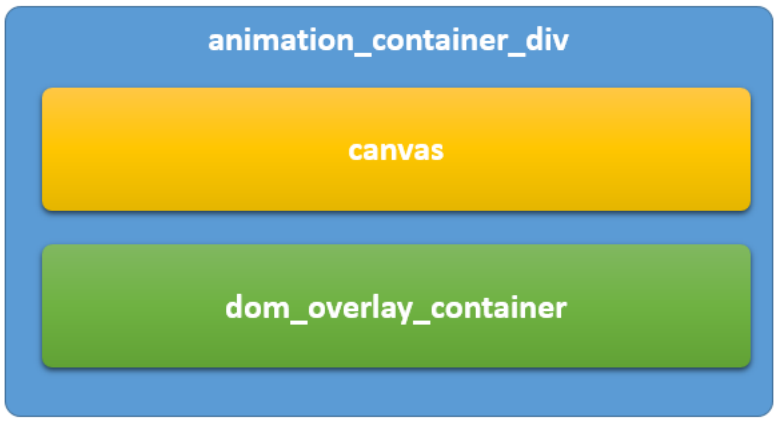
A base class is provided and a utility function in the file **anwidget.js** for easier development of custom components. This interface will be enhanced in future but will be backward compatible. Currently only DOM- based components are supported; however support for canvas based components will be extended. Currently only widgets are supported; however, the framework will be enhanced to support attaching behaviors (non-ui components).

The file **anwidget.js** is present under HTML5Components/sdk folder in your first run folder. It provides a base class ***AnWidget***for custom components and a utility method *$.anwidget(<className>,{Object Prototype})* for registering a custom component. The current implementation uses jQuery, so jQuery is always added as a dependency whenever you use the services provided by a widget. However, if you do not want to add an implicit dependency on jQuery, then you may need to implement a Component class without jQuery which provides the same interface as a Widget.

```
<body onload="init();" style="margin:0px;">
    <div id="$ANIM_CONTAINER_ID" style="background-color:$BG; width:$WTpx; height:$HTpx">
        <canvas id="$CANVAS_ID"
            width="$WT"
            height="$HT"
            style="position: absolute; display: $CANVAS_DISP; background-color:$BG;">
        </canvas>
        <div
            id="dom_overlay_container"
            style="pointer-events:none; overflow:hidden; width:$WTpx; height:$HTpx; position: absolute; left:
            0px; top: 0px; display: $CANVAS_DISP;">
        </div>
    </div>
    $PRELOADER_DIV
</body>
```

HTML template

The html contains these sections (excluding the preloader div) by default:



Default HTML sections (excluding the preloader div)

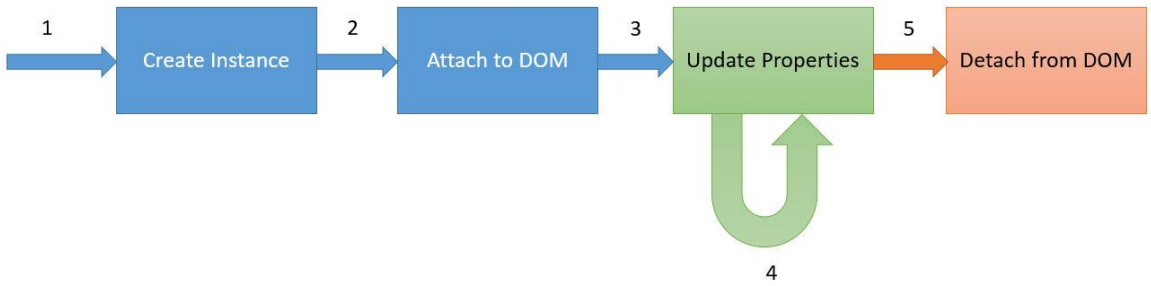
Do note that the previous figure illustrates the order in which the elements are added in the DOM. Thus the dom_overlay_container div is shown above the canvas.

Note:

Do not change the ID of the dom_overlay_container div as in our first release, there are a couple of features which depend on this ID like code snippets.

As shown in the previous illustration, the **dom_overlay_container** div is shown on top of the canvas as an overlay. To make sure that the mouse events are propagated properly to the underlying canvas too, we use the CSS property {**pointer-events: none**} for this div so that mouse events are propagated to the underlying canvas. All the component instances which are configured in Animate CC in your project are instantiated and attached as a child of this **dom_overlay_container** div. The relative ordering of the component instances are maintained at runtime, but currently all the component instances are always shown as an overlay. We set ***{pointer-events: all}*** for all the component instances at runtime so that they also receive the mouse events.

Component lifecycle



Component lifecycle

1. The component instance is created when the DOM is being constructed for the container.
2. The instance is then attached to the DOM when the playhead reaches the frame where the component instance is used. It then attaches an update handler which is called on every tick at runtime. The component also fires an event '**attached**' at this time with the following event data *{id: id_of_the_instance}* on the parent element.
3. The Properties are updated in every update callback. All the property updates are cached and applied once during a tick handler. Currently custom property tweens are not supported. Only the basic properties such as transform and visibility are updated.
4. When the playhead reaches a frame where component instance is removed, we detach it from the DOM. A '**detached**' event is fired this time on the parent element.

The base class is called $.AnWidget and provides the following overrides:

Name	Mandatory	Description
getCreateOptions()	No	Returns any options which the component wants to be applied during component instantiation. A typical override generally uses this to assign a unique ID to every instance by making use of the global variable _widgetID. The example in the next section will make its usage clear.
getCreateString()	Yes	Return the string for your DOM instance creation. This string is passed to jQuery to create the actual DOM element which is attached later to the base DOM. For example, for an image component this should return "<image>". At runtime the element is created and the reference to the jQuery wrapper is stored as follows in the component instance: *this._element = $(this.getCreateElement())* // this._element – jQuery wrapper for the underlying DOM element created. We can also create composite elements; the details will be covered in an examples section.
getProperties()	No	Returns an array of configurable CSS property names. Typically, this matches with all the properties you configured in **components.json** For example, for the video component this array contains the following entries: ["left", "top", "width", "height", "position", "transform-origin", "transform"]
getAttributes()	No	Returns an array of configurable **attributes**. Typically, this matches with all the attributes that you are permitted to configure in **components.json** For example, for the video component this array contains the following entries: ["id", "src", "controls", "autoplay", "loop", "class"]

attach(parent)	No	This function is called whenever the component instance is about to be attached to the 'parent' DOM element. The default implementation does the following (and some more stuff): *// Appends the element to the parent DOM* *$(parent).append(this._element);* //Stores the ref in **this._$this** *this._$this = $(this._element);* *//Calls force update to apply all properties* *this.update(true);* *this._attached = true;* *//Triggers the attached event on parent* *$(parent).trigger("attached", this.getEventData("attached"))* You do not need to override this function. However, for composite elements we may need to override it. More details will be covered in the examples section. **Note:** You can use this._superApply(arguments) to call any base class method from any override.
detach()	No	This function is called whenever the component instance is about to be removed from the DOM. The default implementation does the following: *//Removes the element from the DOM* *this._$this.remove();* *//Triggers the detached event on parent* *$(parent).trigger("detached", this.getEventData("detached"));*
setProperty(k,v)	No	This function is used to set any property for the instance. These changes are cached and are applied at once during the call to update() every frame for every property which is dirty.

update(force)	No	This function is called every frame when the component is part of DOM and is visible. The default implementation applies all the CSS properties and attributes which have changed or if force parameter is true.
show()	No	Shows the element instance. You typically don't need to override this, but for composite elements you may need to.
hide()	No	Hides the element instance. You typically don't need to override this, but for composite elements you may need to.
getEventData(e)	No	Returns any custom data for the event with name 'e'. The default implementation passes the data *{id: instance_id}* for attached and detached events.
destroy()	No	Frees the memory when the component instance is detached from DOM. You typically don't need to override this.
applyProperties(e)	No	Helper API for applying the CSS properties to the jQuery wrapper e.
applyAttributes(e)	No	Helper API for applying the attributes to the jQuery wrapper e.

Localization

The category string, component display name and property name can be localized. Create a file called **strings.json** in a folder with the name **locale** under the components folder. Provide the key-value pairs for all the strings to be localized and use the key in the **components.js**. For other locales, you need to provide the strings in the corresponding folders under the **locale** folder.

```
{
    "CATEGORY_MY_COMPONENTS": "My Components",
    "DISP_NAME_IMAGE": "Image",
    "PROP_VISIBLE": "visible",
    "PROP_CLASS": "class",
    "PROP_ALT": "alt",
    "PROP_SOURCE": "source"
}
```

.json string

Package and distribute custom HTML5 components

Animate developers or designers can enable animators to install and use components without coding, by providing ready-to-use packaged components. Previously, animators had to learn file structures, do programming, and manually move the files to specific folders to activate the HTML5 extensions.

Prerequisites

- Any component created by a developer. Click here for instructions on creating components.
- CC Extensions signing toolkit. Download the toolkit here

Before packaging your component, create an **MXI** file with the metadata of source and destination path of components. For example,

```
<file source="jquery-ui-1.12.0" destination="$FLASH\HTML5Components\jQueryUI\" file-
type="ordinary" />
```

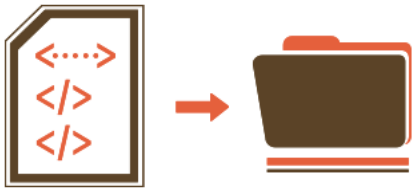
This source and destination file information is required to enable extensions utility for accurate installation of your component.

Packaging components

To package the HTML5 custom components, perform the following steps:

1 To create an **MXI** file, enter the content similar to the sample abc.mxi file using a text editor and save it with an **MXI** extension.

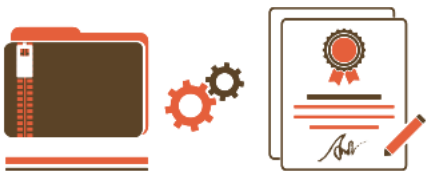
2 Add your **MXI** component file and other associated files in a folder.



3 Create a **ZXP** extension zip file by using the CC Extensions signing tool (**ZXPSignCmd.exe**). Use the following commands in **ZXP** Sign Command tool to create a ZXP file:

1. Create a self-signed certificate by using the -**selfSignedCert** option.

You can skip this step if you already have a certificate.



```
ZXPSignCmd -selfSignedCert US NY MyCompany MyCommonName password FileName.p12
```

FileName.p12 file is generated in the current folder.

2. Sign the extension using the following command:

```
ZXPSignCmd -sign projectName projectName.zxp FileName.p12 password
```

projectName is the name of the Extension Project. In the current folder, a file with the name **projectName.zxp** is generated.

Distribute components

You can distribute this **projectName.zxp** packaged component file to any of the Animate users.

Note:

Adobe recommends that you distribute your products through the Adobe Add-ons website. You can distribute add-ons publicly (free or paid) or privately (free to named users). Learn more about sharing products privately.

Install distributed components

Animate designers or developers can install the distributed **ZXP** file component by using the **Manage Extensions** utility.

For more information, see Install distributed components

How to work with classic tween animation in Animate CC

Classic tweens are an older way of creating animation in Animate. These tweens are similar to the newer motion tweens, but are more complicated to create and less flexible. However, classic tweens do provide some types of control over animation that motion tweens do not. Most users choose to work with the newer motion tweens, but some users still want to use classic tweens. For more information about the differences, see Differences between motion tweens and classic tweens.

Before you begin:

Before working with classic tweens, keep in mind the following points:

- Classic tweens are the older way of creating tweened animation in Animate. The newer, easier way is to use motion tweens. See Motion tween animation.
- You cannot tween 3D properties with classic tweens.

For samples of classic tween animation, see the Animate Samples page at www.adobe.com/go/learn_fl_samples. The following samples are available:

- Animated Drop Shadow: Download and decompress the Samples ZIP file and navigate to the Graphics\AnimatedDropShadow folder to access the sample.

- Animation and Gradients: Download and decompress the Samples ZIP file and navigate to the Graphics\AnimationAndGradients folder to access the sample.

Note:

Like most things in Animate, animation does not require any ActionScript. However, you can create animation with ActionScript if you choose.

Creating and editing keyframes for classic tween animation

Changes in a classic tween animation are defined in a keyframe. In tweened animation, you define keyframes at significant points in the animation and Animate creates the contents of frames between. The interpolated frames of a tweened animation appear as light blue with an arrow drawn between keyframes. Because Animate documents save the shapes in each keyframe, create keyframes only at those points in the artwork where something changes.

Keyframes are indicated in the Timeline. A solid circle represents a keyframe with content on it, and an empty circle before the frame represents an empty keyframe. Subsequent frames added to the same layer have the same content as the keyframe.

Only keyframes are editable in a classic tween. You can view tweened frames, but you can't edit them directly. To edit tweened frames, change one of the defining keyframes or insert a new keyframe between the beginning and ending keyframes. Drag items from the Library panel onto the Stage to add the items to the current keyframe.

To display and edit more than one frame at a time, see Use onion skinning.

Note:

This feature is about creating keyframes for the older classic tweens. For more information on property keyframes for the newer motion tweens, see Create tween animation.

Creating keyframes

? Do one of the following:

- Select a frame in the Timeline, and select **Insert > Timeline > Keyframe**.
- Right-click (Windows) or Control-click (Macintosh) a frame in the Timeline and select Insert Keyframe.

Inserting frames in the timeline

- To insert a new frame, select **Insert > Timeline > Frame**.
- To create a keyframe, select **Insert > Timeline > Keyframe**, or right-click (Windows) or Control-click (Macintosh) the frame to place a keyframe. Select **Insert Keyframe**.
- To create a blank keyframe, select **Insert > Timeline > Blank Keyframe**, or right-click (Windows) or Control-click (Macintosh) the frame to place the keyframe. Select **Insert Blank Keyframe**.

Deleting or modifying a frame or keyframe

- To delete a frame, keyframe, or frame sequence, select it and right-click (Windows) or Control-click (Macintosh) and select Remove Frames. Surrounding frames remain unchanged.
- To move a keyframe or frame sequence and its contents, select it and drag to the desired location.
- To extend the duration of a keyframe, Alt-drag (Windows) or Option-drag (Macintosh) it to the final frame of the new sequence.

- To copy and paste a frame or frame sequence, select it and select **Edit > Timeline > Copy Frames**. Select a frame or sequence, and select **Edit > Timeline > Paste Frames**. To paste and replace the exact number of copied frames on the target timeline, use the **Paste and Overwrite Frames** option.
- To convert a keyframe to a frame, select the keyframe and select **Modify > Timeline > Clear Keyframe.** Or right-click (Windows) or Control-click (Macintosh) it and select **Clear Keyframe**. The cleared keyframe and all frames up to the subsequent keyframe are replaced with the contents of the frame preceding the cleared keyframe.
- To copy a keyframe or frame sequence by dragging, select it and Alt-drag (Windows) or Option-drag (Macintosh) to the new location.
- To change the length of a tweened sequence, drag the beginning or ending keyframe left or right.
- To add a library item to the current keyframe, drag the item from the Library panel onto the Stage.
- To reverse an animation sequence, select the appropriate frames in one or more layers and select **Modify > Timeline > Reverse Frames**. Keyframes must be at the beginning and end of the sequence.

Adding classic tween animation to an instance, a group, or text

Note:

This feature is about creating older classic tweens. For more information on creating the newer motion tweens, see Create tween animation.

To tween the changes in properties of instances, groups, and type, you can use a classic tween. Animate can tween position, size, rotation, and skew of instances, groups, and type. Also, Animate can tween the color of instances and type, creating gradual color shifts or making an instance fade in or out.

Before tweening the color of groups or type, make them into symbols. Before animating individual characters in a block of text separately, place each character in a separate text block.

If you apply a classic tween, and change the number of frames between the two keyframes, Animate automatically tweens the frames again. Or, if you move the group or symbol in either keyframe, Animate automatically tweens the frames again.

Creating a classic tween animation

1. To make a layer as an active layer, click a layer name and select an empty keyframe in the layer, to start. This frame is the first frame of the classic tween.
2. To add content to the first frame of the classic tween, do one of the following:
   - Create a graphic object with the Pen, Oval, Rectangle, Pencil, or Brush tool, and then convert it to a symbol.
   - Create an instance, group, or text block on the Stage.
   - Drag an instance of a symbol from the Library panel.

   Note:

   To create a tween, you must have only one item on the layer.
3. Create a second keyframe where you want the animation to end, and leave the new keyframe selected.
4. To modify the item in the ending frame, do any of the following:
   - Move the item to a new position.
   - Modify the item's size, rotation, or skew.

- Modify the item's color (instance or text block only). To tween the color of elements other than instances or text blocks, use shape tweening.

5 To create the classic tween, do one of the following:

- Click any frame in the tween's frame span and select **Insert** > **Classic Tween**.
- Right-click (Windows) or Control-click (Macintosh) any frame in the tween's frame span and select Create Classic Tween from the context menu.

If you created a graphic object in step 2, Animate automatically converts the object to a symbol and names it tween1.

6 To tween the size of the selected item, select scale in the tweening section of the Property inspector. As a prerequisite, you modify the size of the item in step 4.

7 To produce a more realistic sense of motion, apply easing to the classic tween. To apply easing to a classic tween, use the Ease field in the Tweening section of the Property inspector. Use the **Custom Ease** dialog box to more precisely control the speed of the classic tween.

To adjust the rate of change between tweened frames, drag the value in the Easing field or enter a value.

- To begin the classic tween slowly and accelerate the tween toward the end of the animation, enter a negative value between -1 and -100.
- To begin the classic tween rapidly and decelerate the tween toward the end of the animation, enter a positive value from 1 through 100.
- To produce a more complex change in speed within the tween's frame span, click the Edit button next to the Ease field. It opens the **Custom Ease** dialog box.

  By default, the rate of change between tweened frames is constant. Easing creates a more natural appearance of acceleration or deceleration by gradually adjusting the rate of change.

8 To rotate the selected item during the tween, select an option from the Rotate menu in the Property inspector:

- To prevent rotation, select None (the default setting).
- To rotate the object once in the direction requiring the least motion, select Auto.
- To rotate the object as indicated, and then enter a number to specify the number of rotations, select Clockwise (CW) or Counterclockwise (CCW).

Note:

The rotation in step 8 is in addition to any rotation you applied to the ending frame in step 4.

9 If you're using a motion path, select Orient To Path in the Property inspector to orient the baseline of the tweened element to the motion path.

10 To sync up the animation of graphic symbol instances with the main timeline, select the **Sync** option in the Property inspector.

Note:

Synchronize Symbols *and the* ***sync*** *option both recalculate the number of frames in a tween to match the number of frames allotted to it. Use the* ***Sync*** *option if the frames in an animation sequence are not an even multiple of the number of frames in the graphic instance.*

11 If you're using a motion path, select **Snap** to attach the tweened element to the motion path by its registration point.

Working with Classic tweens saved as XML files

Animate allows you to work with Classic Tweens as XML files. Natively, Animate allows you to apply the following commands on any Classic Tween:

- Copy Motion as XML
- Export Motion as XML
- Import Motion as XML

Copy Motion as XML

Allows you to copy Motion properties applied to any object on the Stage at a said frame.

1. Create a Classic Tween.
2. Select any keyframe on the Timeline.
3. Go to **Commands > Copy Motion as XML**.

The Motion properties are copied to the clipboard as XML data. You can then use any text editor to work on the XML file.

Export Motion as XML

Allows you to export Motion properties applied to any object on the stage to an XML file that can be saved.

1. Create a classic tween.
2. Go to **Commands > Export Motion as XML**.
3. Browse to a suitable location where you want to save the file.
4. Provide a name for the XML file, and click **Save**.

   The Classic tween is exported as an XML file at the specified location.

Import Motion as XML

Allows you to import an existing XML file that has Motion properties defined.

1. Select an object on the stage.
2. Go to **Commands > Import Motion as XML**.
3. Browse to the location, and select the XML file. Click **Ok**.
4. On the **Paste Motion Special** dialog box, select the properties that you want to apply on the selected object.
5. Click **Ok**.

Creating a motion guide layer

To control the movement of objects in a *classic tween* animation, create a motion guide layer.

You cannot drag a *motion tween* layer or inverse kinematics *pose layer* onto a guide layer.

? Drag a normal layer onto a guide layer. This action converts the guide layer to a motion guide layer and links the normal layer to the new motion guide layer.

   Note:

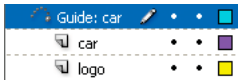
   To prevent accidentally converting a guide layer, place all guide layers at the bottom of the layer order.

Creating classic tween animation along a path

Note:

This feature is about working with older classic tweens. For more information on using the newer motion tweens with motion paths, see Edit the motion path of a tween animation.

Motion guide layers let you draw paths along which tweened instances, groups, or text blocks can be animated. You can link multiple layers to a motion guide layer to have multiple objects follow the same path. A normal layer that is linked to a motion guide layer becomes a guided layer.



In this example, two objects on separate layers are attached to the same motion path.

Create a motion path for classic tweened animation

1. Create a classic-tweened animation sequence.

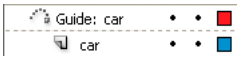
   If you select **Orient To Path** in the Property inspector, the baseline of the tweened element orients to the motion path. If you select Snap, the registration point of the tweened element snaps to the motion path.

2. Right-click (Windows) or Control-click (Macintosh) the layer name of the layer containing the classic tween and choose Add Classic Motion Guide.

   Animate adds a motion guide layer above the classic tween layer and indents the name of the classic tween layer. It represents that classic tween layer is bound to the motion guide layer.

   Note:

   If you already have a guide layer in the timeline, you can drag a layer containing the classic tween below the guide layer. This action converts the guide layer to a motion guide and binds the classic tween to it.

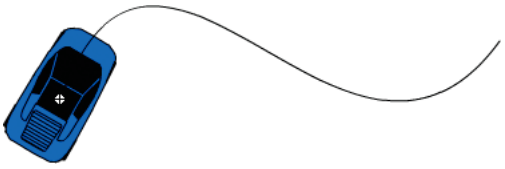


A motion guide layer above the layer containing the classic tween.

3. To add a path to the motion guide layer, select the motion guide layer and use Pen, Pencil, Line, Circle, Rectangle, or Brush tool.

   You can also paste a stroke onto the motion guide layer.

4. Drag the object you are tweening, to snap it to the beginning of first frame or to the end of the last frame.



A graphic of a car snapped to the beginning of a guide stroke.

   Note:

   For best snapping results, drag the symbol by its transformation point.

5. To hide the motion guide layer and the path click in the eye icon column on the motion guide layer. If you hide, only the object's movement is visible while you work.

   The group or symbol follows the motion path when you play the animation.

To know more about animation guide based on variable width stroke and variable stroke color, see Animation Guide

Linking layers to a motion guide layer

? Do one of the following:

- Drag an existing layer below the motion guide layer. The layer is indented under the motion guide layer. All objects on this layer automatically snap to the motion path.
- Create a layer under the motion guide layer. Objects you tween on this layer are automatically tweened along the motion path.
- Select a layer below a motion guide layer. Select **Modify** > **Timeline** > **Layer Properties**, and select **Guide**.

Unlinking layers from a motion guide layer

? To unlink, select the layer and do one of the following:

- Drag the layer above the motion guide layer.
- Select **Modify** > **Timeline** > **Layer Properties**, and select **Normal** as the layer type.

Pasting classic tween animation properties

Note:

This feature is about pasting properties of older classic tweens. For more information on pasting properties of the newer motion tweens, see Copy and paste motion tween properties.

The Paste Motion command lets you copy a classic tween, and paste only specific properties to apply to another object.

1. Select the frames in the Timeline that contain the classic tween to copy. The frames you select must be on the same layer, however, they do not have to span a single classic tween. The selection can span a tween, empty frames, or two or more tweens.
2. Select **Edit** > **Timeline** > **Copy Motion**.
3. To receive the copied classic tween, select the symbol instance.
4. Select **Edit** > **Timeline** > **Paste Motion Special**. Select the specific classic tween properties to paste to the symbol instance. The classic tween properties are:

   X Position How far an object moves in the x direction.

   Y Position How far an object moves in the y direction.

   Horizontal Scale The ratio between the current size of the object and its natural size in the horizontal direction (X).

   Vertical Scale Specifies the ratio between the current size of the object and its natural size in the vertical direction (Y).

   Rotation And Skew The rotation and skew of the object. These properties must be jointly applied to an object. Skew is a measurement of rotation in degrees, and when you rotate and skew, each property affects the other.

   Color All color values such as Tint, Brightness, and Alpha are applied to the object.

   Filters All filter values and changes for the selected span. If filters are applied to an object, the filter is pasted with all values intact. And, its state (enabled or disabled) applies to the new object.

   Blend Mode Applies the blend mode of the object.

   Override Target Scale Properties When deselected, specifies that all properties be pasted relative to the target object. When checked, this option overrides the scale properties of the target.

Override Target Rotation And Skew Properties When deselected, it specifies that all properties be pasted relative to the target object. When checked, the pasted properties override the existing rotation and scale properties of the object.

The necessary frames, tween, and symbol information are inserted to match the original, copied tween.

To copy a symbol's classic tween to the Actions panel or use it in another project as ActionScript, use the Copy Motion as ActionScript 3.0 command.

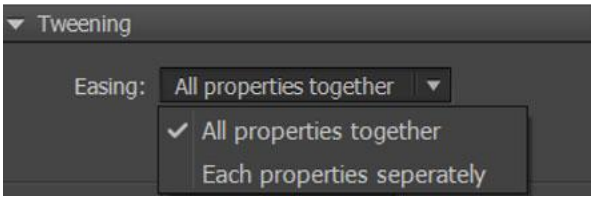
Creating ease presets

Ease presets are pre-configured eases that can be applied to an object on the stage.

A set of commonly used ease presets are available for Classic tween. You can select the preset from a list of ease presets and apply it to the selected property.

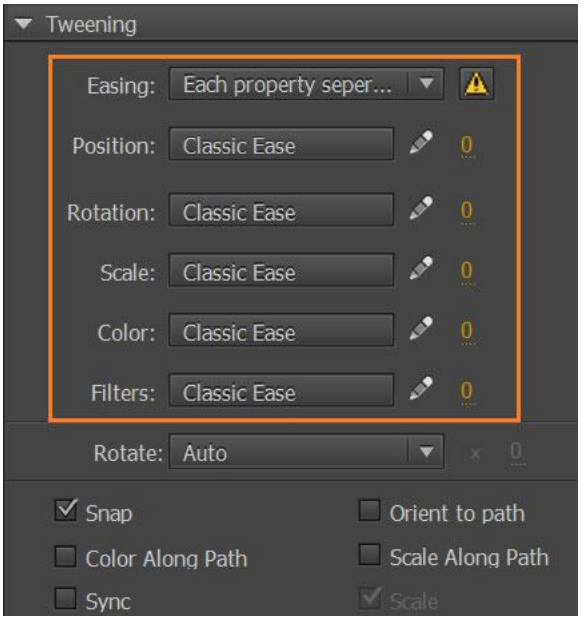
1 Click the layer that contains a tween in the timeline of Animate.

2 To open tweening properties, click the **Tweening** category in the property panel. You can access the property-wise easing using the ease type drop-down.



Tweening properties

You can apply ease presets property-wise for classic tweens. In properties panel, an option to choose property-wise easing is provided. You can select **Each properties separately** to apply different easing presets for each property.



property-wise presets

You can select unique ease presets for position, rotation, scale, color and filter properties of a classic tween.

Position Specifies ease settings for the position of an animated object on stage.

Rotation Specifies ease settings for the rotation of an animated object on stage.

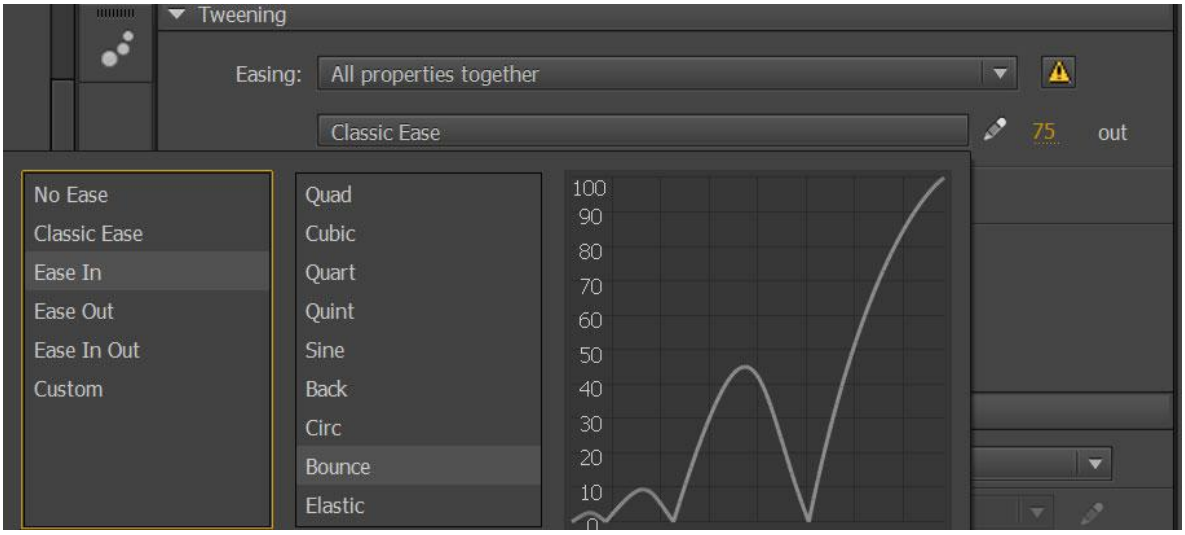
Scale Specifies ease settings for the scale of an animated object on stage.

Color Specifies ease settings for the color transitions applied to an animated object on stage.

Filters Specifies ease settings for filters applied to an animated object on stage.

3 Alternatively, if you want to have same easing across all properties of the tween, choose **All properties together** option. Select the ease preset of your choice from the ease type pop-up dialog box and double-click ease preset to apply.

If you choose to apply classic ease, you can also increase or decrease the intensity of ease by moving the slider.



List of ease presets

4 Click the edit icon next to **Ease** to apply a custom ease.

If you use HTML5 canvas document type, you can get an optimized js output file for ease presets. HTML5 canvas uses the easing functions of Tween JS while creating an output.

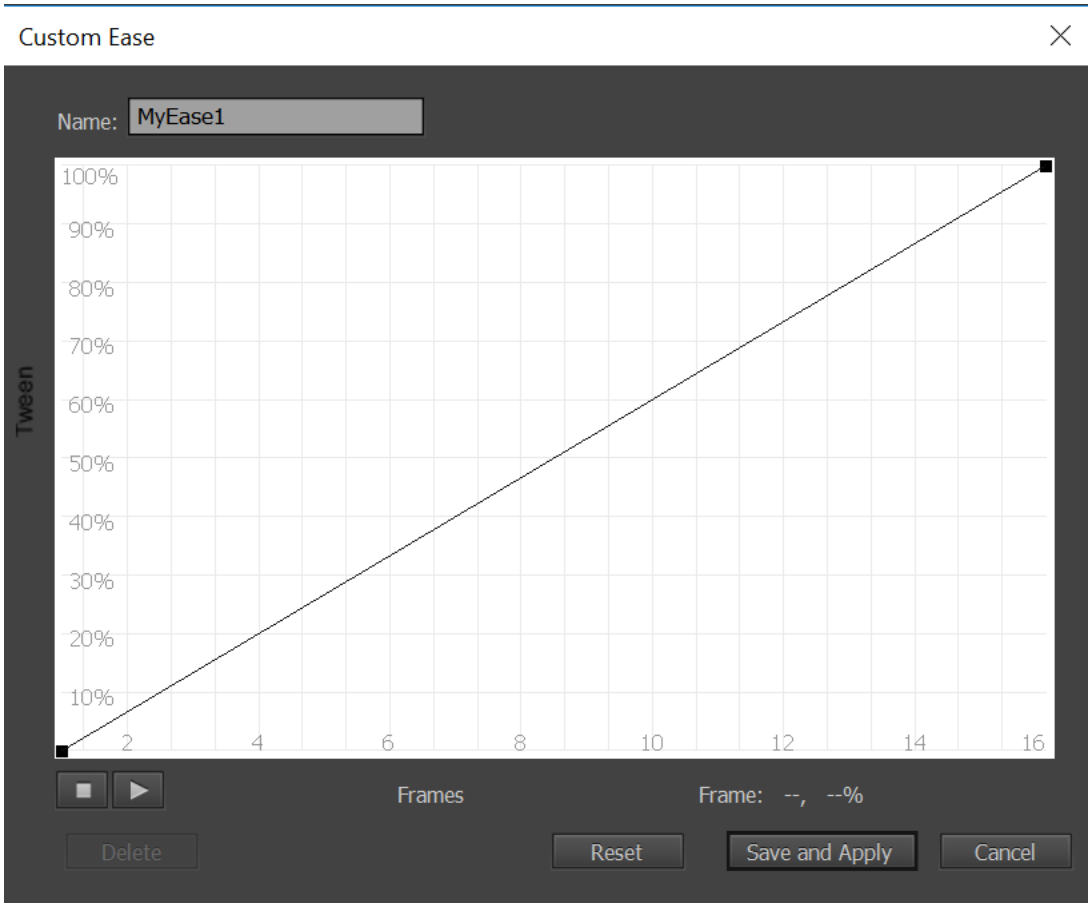
Applying custom ease to classic tween animation

Note:

This feature is about adding easing to older classic tweens. For more information on adding easing to the newer motion tweens, see Easing tween animations.

The **Custom Ease** dialog box displays a graph representing the degree of motion over time. The horizontal axis represents frames, and the vertical axis represents percentage of change. The first keyframe is represented as 0%, and the last keyframe is represented as 100%.

The slope of the graph's curve represents the rate of change of the object. When the curve is horizontal (no slope), the velocity is zero; when the curve is vertical, an instantaneous rate of change occurs.



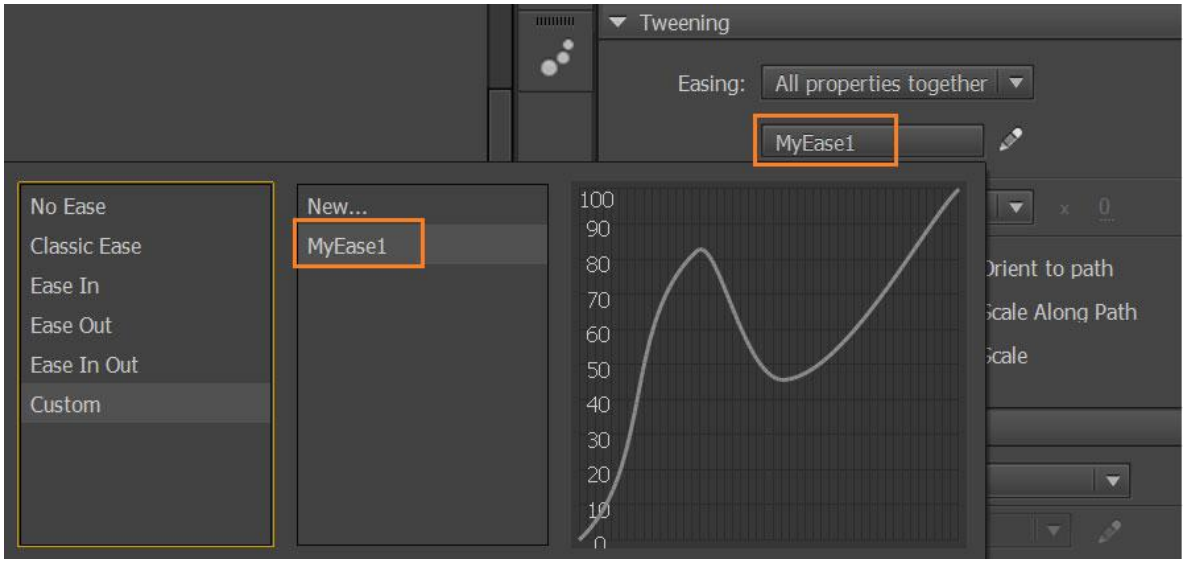
Custom Ease graph showing constant velocity. Open this dialog by selecting a frame in a classic tween and clicking the Edit button in the Ease section of the Property inspector.

Saving custom eases

You can save the custom eases by the click of a button and reuse them by choosing your customized ease from the custom list. Click **Save and Apply** in edit mode after making the changes. In the following screenshot, you can find the customized ease preset with the name **MyEase1**.

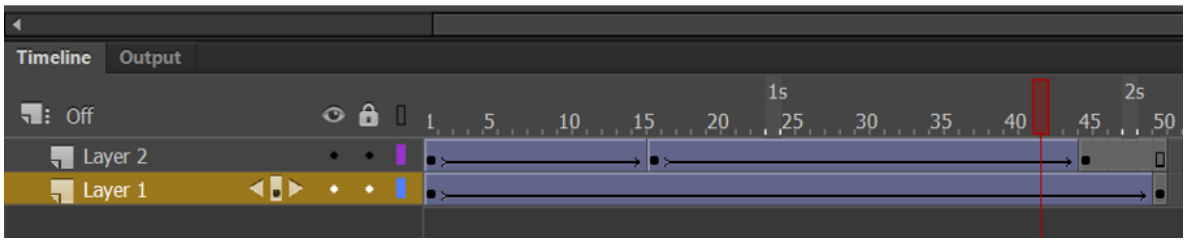
Note:

You can reuse the customized ease presets only within the same document type.



Customized easing preset

You can use the preset eases across multiple spans in the timeline by selecting the corresponding spans and applying the ease.



Easing preset across multiple spans

More controls for the CustomEase dialog box

Play and Stop buttons Let you preview an animation on the stage using all the current velocity curves defined in the Custom Ease dialog box.

Delete Deletes the current custom ease.

Save and Apply Saves and applies the changes you have done for the easing presets.

Reset button Lets you reset the velocity curve to the default, linear state.

Position of the selected control point In the lower-right corner of the dialog box, a numeric value displays the keyframe and position of the selected control point. If no control point is selected, no value appears.

To add a control point to the line, click the diagonal line once. To achieve a precise degree of control over the motion of an object, drag the positions of the control points.

Using frame indicators (represented by square handles), click where you want an object to slow down or speed up. Clicking the square handle of a control point selects that control point, and displays the tangent points on either side of it. Hollow circles represent tangent points. To position them, drag the control point or its tangent points with the mouse or use the keyboard's arrow keys.

Tip: By default, the control points snap to a grid. You can turn off snapping by pressing the X key while dragging the control point.

Clicking an area of the curve away from any control points adds a control point to the curve at that point. This action does not change the shape of the curve. Clicking away from the curve and control points deselects the currently selected control point.

Adding a custom ease

1. Select a layer in the Timeline that has a classic tween applied to it.
2. Click the Edit button next to the Ease slider in the frame Property inspector.
3. To add a control point, Control-click (Windows) or Command-click (Macintosh) the diagonal line.
4. To increase the speed of the object, drag the control point up; to slow down the speed of the object, drag it downwards.
5. To further adjust the ease curve, and fine tune the ease value of the tween, drag the vertex handles.
6. To view the animation on the stage, click the play button in the lower-left corner.
7. Adjust the controls until you achieve the desired effect.

Note:

If you use the Custom Ease dialog box, the edit field shows --. If you use edit or pop-up slider, the custom ease graph is set to the equivalent curve. And, the ***Use One Setting For All Properties*** *check box is selected.*

Copying and pasting an ease curve

- To copy the current ease curve, press Control+C (Windows) or Command+C (Macintosh).
- To place the copied curve into another ease curve, press Control+V (Windows) or Command+V (Macintosh).

  You can copy and paste the ease curve. The copied curve remains available until you exit the Animate application.

Unsupported easing curves

Certain types of easing curves are not supported. No part of the graph can represent a nonlinear curve (such as a circle).

The Custom Ease dialog box automatically prevents moving a control point or a tangent handle to a position that would render an invalid curve:

- All points must exist on the graph. Control points cannot be moved beyond the bounds of the graph.
- All segments of the curve must exist within the graph. The shape of the curve is flattened to prevent it from extending beyond the bounds of the graph.

How to use frames and keyframes in Animate CC

Overview

Adobe Animate CC documents divide lengths of time into frames similar to films. Frames are at the core of any animation, dictating each segment of time and movement. The total number of frames in your movie, and the speed at which they are played back, together determine your movie's overall length. A brief description of some of the concepts on frames is explained below for your reference.

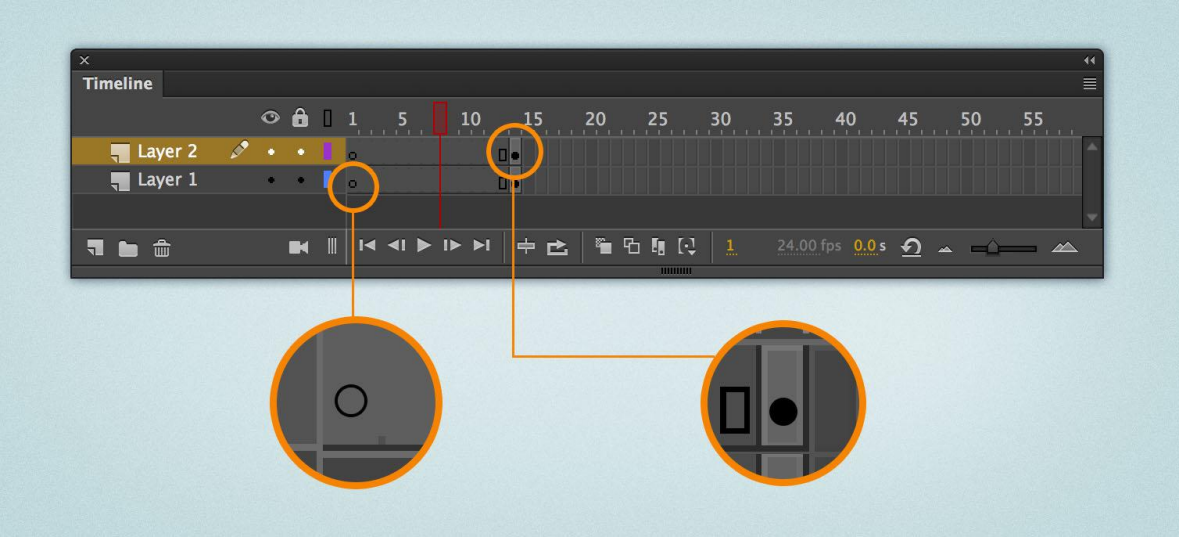
Frames

In the timeline, you work with the frames to organize and control the content of your document. You place frames in the timeline in the order you want the objects in the frames to appear in your finished content.

Keyframe

A keyframe is a frame where a new symbol instance appears in the timeline. A keyframe can also be a frame that includes ActionScript® code to control some aspect of your document. You can also add a blank keyframe to the timeline as a placeholder for symbols you plan to add later or to explicitly leave the frame blank.

Using keyframe you can set a position, add anchor points, actions, comments and so on.



Span

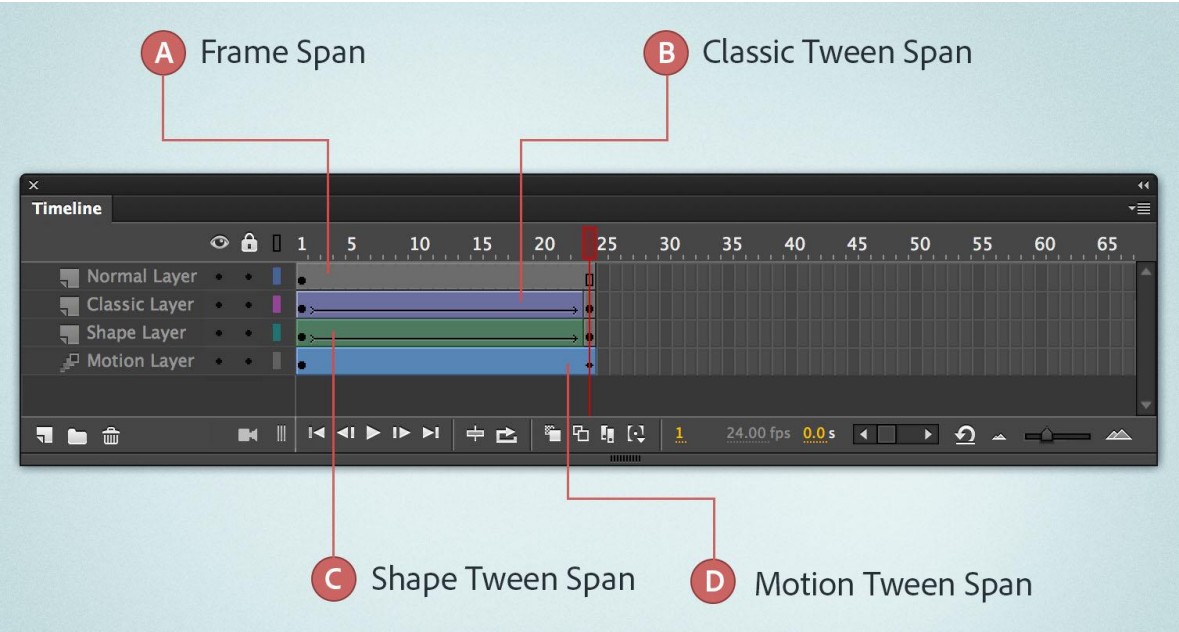
Span-based frame selection allows you to select a range of frames between two keyframes with a single click.

Static frame span

In static frame span, same content is available for entire duration of span. You can use this type of span whenever you need to display graphics for fixed amount of time.

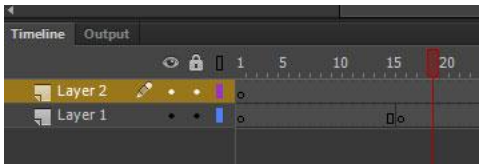
Tweened frame span

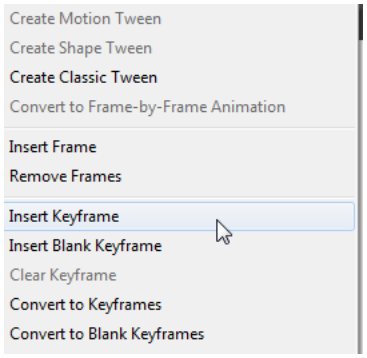
In tweened frame span, the content changes within the span for each frame. You can use this type of span for animations.



Add or insert frames in the timeline

- To insert a new frame, select **Insert** > **Timeline** > **Frame** (F5).
- To create a keyframe, select **Insert** > **Timeline** > **Keyframe** (F6), or right-click (Windows) or Control-click (Macintosh) the frame where you want to place a keyframe, and select **Insert Keyframe** from the context menu.





- To create a blank keyframe, select **Insert** > **Timeline** > **Blank Keyframe**, or right-click (Windows) or Control-click (Macintosh) the frame where you want to place the keyframe, and select **Insert Blank Keyframe** from the context menu.

Select and label frames in the timeline

You can select frames by using two methods provided in Animate. You can also label frames to organize its contents.

Animate offers two different methods for selecting frames in the timeline. In frame-based selection (the default), you select individual frames in the timeline. In span-based selection, the entire frame sequence, from one keyframe to the next, is selected when you click any frame in the sequence.

Select frames in the timeline

Single or multiple frames selection

- To select one frame, click the frame.
- To select multiple contiguous frames, drag the cursor over the frames, or Shift-click additional frames.
- To select multiple non-contiguous frames, Control-click (Windows) or Command-click (Macintosh) additional frames.
- To select all frames in the timeline, select **Edit > Timeline > Select All Frames**.

Span based frames selection

As a prerequisite for span based selection, you can specify span-based selection in Animate timeline by clicking the hamburger icon at the upper-right corner and selecting **Span Based Selection** menu item.

- To select a whole span of frames (motion tween or inverse kinematics) click on frame.
- To select multiple spans, click on each of them while holding the **Shift** key.

Label frames in the timeline

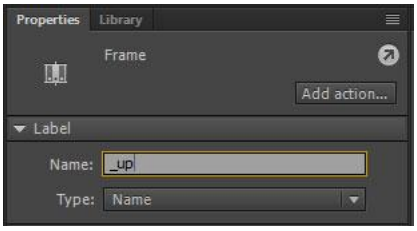
You can label frames in the timeline as a way of helping organize its contents. You can also label a frame in order to be able to refer to that frame in ActionScript by its label. That way, if you rearrange the timeline and move the label to a different frame number, the ActionScript will still refer to the frame label and will not have to be updated.

Frame labels can only be applied to keyframes. A best practice is to create a separate layer in the timeline to contain your frame labels. Using separate layer for labels enables you to organize content and keyframes better.

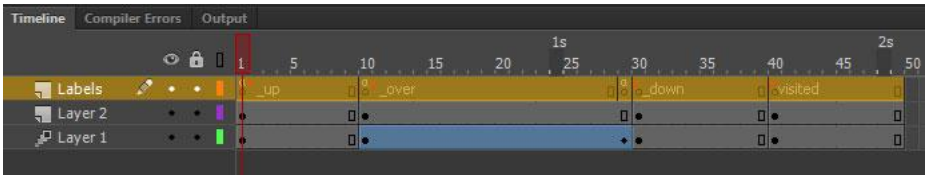
To add a frame label:

1 Select the frame you wish to label in the timeline.

2 With the frame selected, enter the label name in the Label section of the Property inspector. Press Enter or Return.



3 As a best practice, create a separate layer for all labels in the frame.



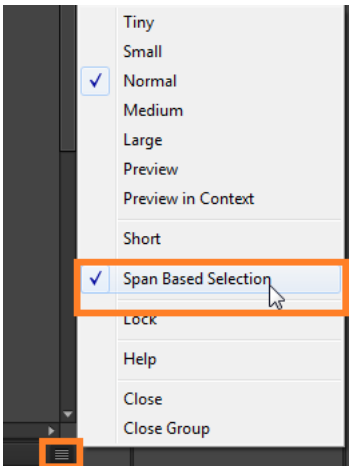
Enable span-based frame selection

Span-based frame selection allows you to select a range of frames between two keyframes with a single click.

1 Click the hamburger icon at the upper-right corner of the timeline section.

A pop-up menu appears.

2 Select the **Span Based Selection** from the pop-up menu.

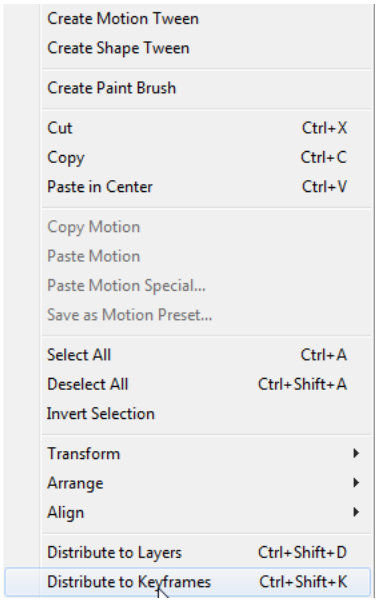


Distribute to keyframes

Distribute to keyframes option allows you to distribute multiple objects (Symbols and Bitmaps) on the stage to individual kyframes each.

1 Select multiple objects of any layer on the stage.

2 Right-click anywhere on stage, and select **Distribute to KeyFrames**.



Copy, paste, delete, or move a frame or frame sequence

A keyframe and the span of regular frames that follow it are known as a keyframe sequence. The timeline can contain any number of keyframe sequences.

To copy or paste a frame or frame sequence, do one of the following:

Copy or paste a frame or frame sequence

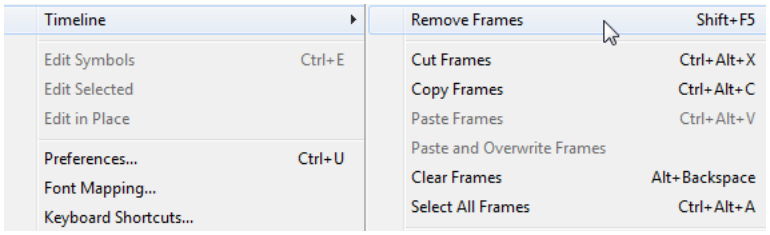
- Select the frame or sequence and select **Edit > Timeline > Copy Frames**. Select the frame or sequence that you want to replace, and select **Edit > Timeline > Paste Frames**.
- Alt-drag (Windows) or Option-drag (Macintosh) a keyframe to the location where you want to copy it.

Delete a frame or frame sequence

Delete a frame, frame sequence or a keyframe

Select the frame or sequence and select **Edit > Timeline > Remove Frame**, or right-click (Windows) or Control-click (Macintosh) the frame or sequence and select Remove Frame from the context menu.

Surrounding frames remain unchanged.



Delete keyframe

Select the keyframe and select **Edit > Timeline > Clear Keyframe**, or right-click (Windows) or Control-click (Macintosh) the keyframe and select **Clear Keyframe** from the context menu.

Move a keyframe or frame sequence

Select a keyframe or frame sequence and then drag the keyframe or sequence to the desired location.

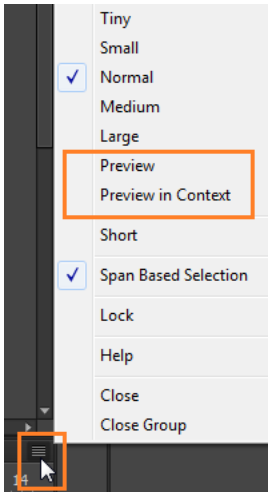
Change the length of a static framesequence

Control-drag (Windows) or Command-drag (Macintosh) the beginning or ending frame of the span to the left or right.

To change the length of a frame-by-frame animation sequence, see Create frame-by-frame animations.

Preview frame content in the timeline

Choose Preview from the timeline panel options menu at the upper-right corner of the timeline panel.



In each keyframe of the timeline, you can view a thumbnail preview of the items in the keyframe.

Code Snippets for custom Components

You can add code snippets to your custom components to ease your interaction with the component. Lets evaluate two examples present in Animate CC. The new code snippets are added under HTML5 Canvas -> Components section.

1 **Code snippet to attach a click handler to a button**

```
// Disable multiple handlers, as these may be used in frame scripts
if(!this.instance_name_here_click_cbk) {
function instance_name_here_click(evt) {
    // Start your custom code
    console.log("Button clicked");
    // End your custom code
}
// Attach an event handler on the parent with the filter as the
// Component instance's id
$("#dom_overlay_container").on("click", "#instance_name_here",
instance_name_here_click.bind(this));
this.instance_name_here_click_cbk = true;
}
```

Please note that the handler is attached to the parent (dom_overlay_container) with the filter set for the component instance. This is important as the component instance may not be present when you are trying to attach the handler. This ensures that the event handlers are fired properly.

You can similarly provide the event handlers for your custom components.

2 **Code snippet to get value from any input control**

```
console.log($("#instance_name_here").val());
```

3 **Code snippet to be used when the component instance is attached to DOM**

```
// Listen to the attached event, fired by component runtime
$("#dom_overlay_container").on("attached", function(evt, param) {
// Check the id of the instance
if(param && param.id == 'movieClip_1') {
$("#movieClip_1").text("My Button");
}
});
```

Creating custom Components: Examples

This article describes how to create custom components. The first example describes the image component (which is also supplied with Animate CC) and the process to understand the framework and the steps involved in development. The second example describes how to wrap any existing UI component (like jQueryUI) and import it within Animate CC.

? **Creating a DOM image component**

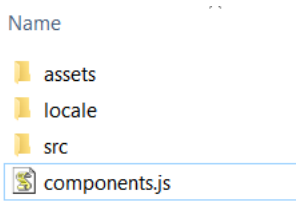
Create a category called **My Components**.

a. Create a folder called **mycomponents** under <HTML5Components> folder in first run

b. Download the attached myimage.zip file and extract the contents under the

mycomponents folder.

c. Restart Animate.



Directory structure within mycomponents folder

You should now see a new category called “My Components” in components folder and a new component called My Image under it. You can drag-and-drop this on stage, set the image source property and publish the movie to see the custom component in action.

Component Metadata - components.js

```
{
    "category": "CATEGORY_MY_COMPONENTS",
    "components": [{
            "className": "my.Image",
            "displayName": "DISP_NAME_IMAGE",
            "version": "1.0",
            "source": "src/myimage.js",
            "icon": "assets/SP_Image_Sm",
            "dimensions": [100, 100],
            "dependencies": [
                {"src": "../lib/jquery-2.2.4.min.js", "cdn": "https://code.jquery.com/jquery-2.2.4.min.js"},
                {"src": "../sdk/anwidget.js"}
            ],
            "properties": [
                {"name": "PROP_SOURCE", "variable": "src", "type": "Image Path", "default": ""},
                {"name": "PROP_ALT", "variable": "alt", "type": "String", "default": "image"},
                {"name": "PROP_BORDER", "variable": "border", "type": "Integer", "default": "0"},
                {"name": "PROP_VISIBLE", "variable": "visible", "type": "Boolean", "default": "true"},
                {"name": "PROP_CLASS", "variable": "class", "type": "String", "default": "ui-image"}
            ]
        }]
}
```

Components.js

Please note that the category is set to CATEGORY_MY_COMPONENTS. The names for each of the properties are also using similar keys. This is the key for the localized string for the category name. If you open strings.json from the locale folder, you will see the following entries.

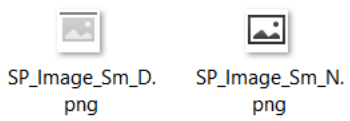
Note:

The most common error while editing this file is having an unnecessary trailing comma for the last element in the array.

```
{
    "CATEGORY_MY_COMPONENTS": "My Components",
    "DISP_NAME_IMAGE": "Image",
    "PROP_VISIBLE": "visible",
    "PROP_CLASS": "class",
    "PROP_ALT": "alt",
    "PROP_BORDER", "border",
    "PROP_SOURCE": "source"
}
```

Category details

The value of the icon field is set to Sp_Image_Sm. If you go to the assets folder you will notice the following two pngs under it with the prefix Sp_Image_Sm.



Value of the icon field

These are the icons for dark and light UI.

The value of the 'source' field in components.json, its set to 'src/myimage.js'.

```
(function($) {
// Register a component with the className: my.Image,
// and prototype with the following overrides
// getCreateOptions
// getCreateString
// getProperties
// getAttributes
    $.anwidget("my.Image", {
       options: {
        'visible': true,
        'position': 'absolute'
       },
    _props: ["left", "top", "width", "height", "position", "transform-origin", "transform"],

_attrs: ["id", "src", "alt", "class", "border"],

// Return a unique ID with the prefix image
    // _widgetID is a global declared in anwidget
    // This id is used only if the user has not set any instance ID for the component in Animate
CC
    // Otherwise the user configured name is used
    getCreateOptions: function() {
        return $.extend(this.options, { 'id': "image" + _widgetID++ });
    },

// Return the string for creating the DOM element
    // For image we just need to create the <img></img> tag
    getCreateString: function() {
        return "<img></img>";
    },

// Set of configurable properties
    getProperties: function() {
        return this._props;
    },

// Set of configurable attributes
    getAttributes: function() {
        return this._attrs;
    }
});
})(jQuery);
```

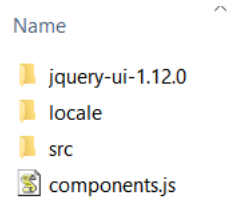
You can follow the comments in the code to understand it easily.

Please feel free to take a look at the source for the other components which are supplied with Animate. In most of the cases you can use one of these as the starting point and then configure it for your own requirements.

Wrapping a jQuery-UI component

This section describes how to wrap a jQuery-UI widget and use it in Animate CC. The same concepts can be used to wrap any other existing component from any other UI framework.

Let us understand the packaged DatePicker component with Animate CC which is a jQuery-UI widget. Download and extract the contents of the following archive and use it for your reference.



Structure of the extracted content

The folder named jquery-ui-1.12.0 is the source for the jQuery UI framework which contains the original DatePicker widget and its resources like images and css to wrap and use in Animate CC like any other HTML5 Component. This is required only for local preview, when you use “hosted libraries” in Publish settings, you have the option to use the cdn to download the dependent sources.

```
{
    "category": "CATEGORY_JQUERYUI",
    "components": [{
            "className": "an.DatePicker",
            "displayName": "DISP_NAME_DATEPICKER",
            "version": "1.0",
            "source": "src/datepicker.js",
            "icon": "assets/datepicker-icon.png",
            "dimensions": [100, 22],
            "dependencies": [
                {"src": "../lib/jquery-2.2.4.min.js", "cdn": "https://code.jquery.com/jquery-2.2.4.min.js"},
                {"src": "../sdk/anwidget.js"},
                {"src": "jquery-ui-1.12.0/jquery-ui.min.js", "cdn": "https://code.jquery.com/ui/1.12.1/jquery-ui.min.js"},
                {"src": "jquery-ui-1.12.0/jquery-ui.min.css", "cdn": "https://code.jquery.com/ui/1.12.1/themes/base/jquery-ui.css"},
                {"src": "jquery-ui-1.12.0/images/ui-icons_444444_256x240.png", "cdn": "https://code.jquery.com/ui/images/ui-icons_444444_256x240.png"},
                {"src": "jquery-ui-1.12.0/images/ui-icons_555555_256x240.png", "cdn": "https://code.jquery.com/ui/images/ui-icons_555555_256x240.png"},
                {"src": "jquery-ui-1.12.0/images/ui-icons_777777_256x240.png", "cdn": "https://code.jquery.com/ui/images/ui-icons_777777_256x240.png"},
                {"src": "jquery-ui-1.12.0/images/ui-icons_cc0000_256x240.png", "cdn": "https://code.jquery.com/ui/images/ui-icons_cc0000_256x240.png"},
                {"src": "jquery-ui-1.12.0/images/ui-icons_ffffff_256x240.png", "cdn": "https://code.jquery.com/ui/images/ui-icons_ffffff_256x240.png"}
            ],
            "properties": [
                {"name": "PROP_LABEL", "variable": "label", "type": "String", "default": ""},
                {"name": "PROP_VISIBLE", "variable": "visible", "type": "Boolean", "default": "true"},
                {"name": "PROP_CLASS", "variable": "class", "type": "String", "default": "jqueryui-datepicker"}
            ]
        }]
}
```

Components.js

There are two default dependencies, jQuery and anwidget.js. Since anwidget.js is not on the CDN, we do not have any CDN entry for the same.

The next set of entries are for the other resources required for loading the datepicker widget from jquery ui. If you are wrapping any widget from any other library, you can similarly specify the set of dependencies for the same. These dependencies are downloaded before the component is initialized.

In the properties section, we have only exposed one property called label, which is bound to the label property for the date-picker component. Similarly, we can expose the other properties too, whichever we want the user to be able to configure in Animate’s authoring environment. At runtime, each of these will be available as a key-value pair in the **options** array for the instance. We can extract the configured value and apply that at runtime.

```
(function($) {
    // Register a datepicker widget as an.DatePicker
    $.anwidget("an.DatePicker", {
        options: {
            'visible': true,
            'disabled': false,
            'position': 'absolute'
        },
        _props: ["left", "top", "width", "height", "position", "transform-origin", "transform"],
        _attrs: ["disabled", "class"],
        getCreateOptions: function() {
            return $.extend(this.options, { 'id': "picker" + _widgetID++ });
        },
        // Create a div with the label text and an input text
        // The input text field will be converted to a datepicker widget at runtime
        getCreateString: function() {
            return "<div id='_datepicker_" + this._options['id'] +"'>"
                        + this._options['label']
                        + " <input type='text' id='" + this._options['id'] + "'></div>";
        },
        getProperties: function() {
            return this._props;
        },
        getAttributes: function() {
            return this._attrs;
        },
        attach: function(parent, bPrepend) {
            // call the base function, but remember if the instance is already attached
            // On the first attach, we convert the textinput to a datepicker using the jqueryui widget call
            var alreadyAttached = this._attached;
            this._superApply(arguments);

            if(alreadyAttached)
                return;

            // This is called only when we are attaching the instance for the first time
            // use the .datepicker() API to convert this DOM element to a datepicker widget
            $("#" + this._options['id'] + "").datepicker();
            $(parent).trigger("attached", this.getEventData("attached"));

            // Reset the this._$this variable to point to the actual input element
            // Since we initialize this._$this with $(this.getCreateString()), by default it will point to the parent div
            this._$this = $("#" + this._options['id']);
            this._$div = this._$this.parent();
        },
        update: function(force) {
            if(!this._$div)
                return;

            var updateSize = force || this._dirty["width"] || this._dirty["height"];
            // Apply css properties on the container div
            this.applyProperties(this._$div, force);
            // But attributes on the real element
            this.applyAttributes(this._$this, force);

            if(updateSize) {
                // Copy the width and height from parent
                this._$this.css("width", this._$div.css("width"));
                this._$this.css("height", this._$div.css("height"));
            }
        }
    });
})(jQuery);
```

Main source file: src/datepicker.js.

Sections that differ from the example

1 **getCreateString:**

The datepicker widget from jQuery-UI takes such an input text element and converts it to a date-picker element at runtime. Therefore, we initialize the DOM accordingly.

2 **attach:**

We need to override this function for this widget. This API is called whenever the element is being attached to the DOM. However, because of the way the underlying runtime (in this case createjs) works, this API may be called multiple times during a frame span.

We remember the attached state of the underlying element and then call the base class's attach API (using this._superApply(arguments)). If this is the first time we are attaching the element to the parent DOM then we use the underlying jQuery-UI widget's call to convert our component's DOM to a datepicker. See - https://jqueryui.com/datepicker/

Most of the javascript widgets work in a similar fashion. You can use the same technique to wrap any component of your choice and bring it into Animate CC in the same manner.

3 **Update:** We override update and apply the css properties to the container div and attributes to the real DOM element.

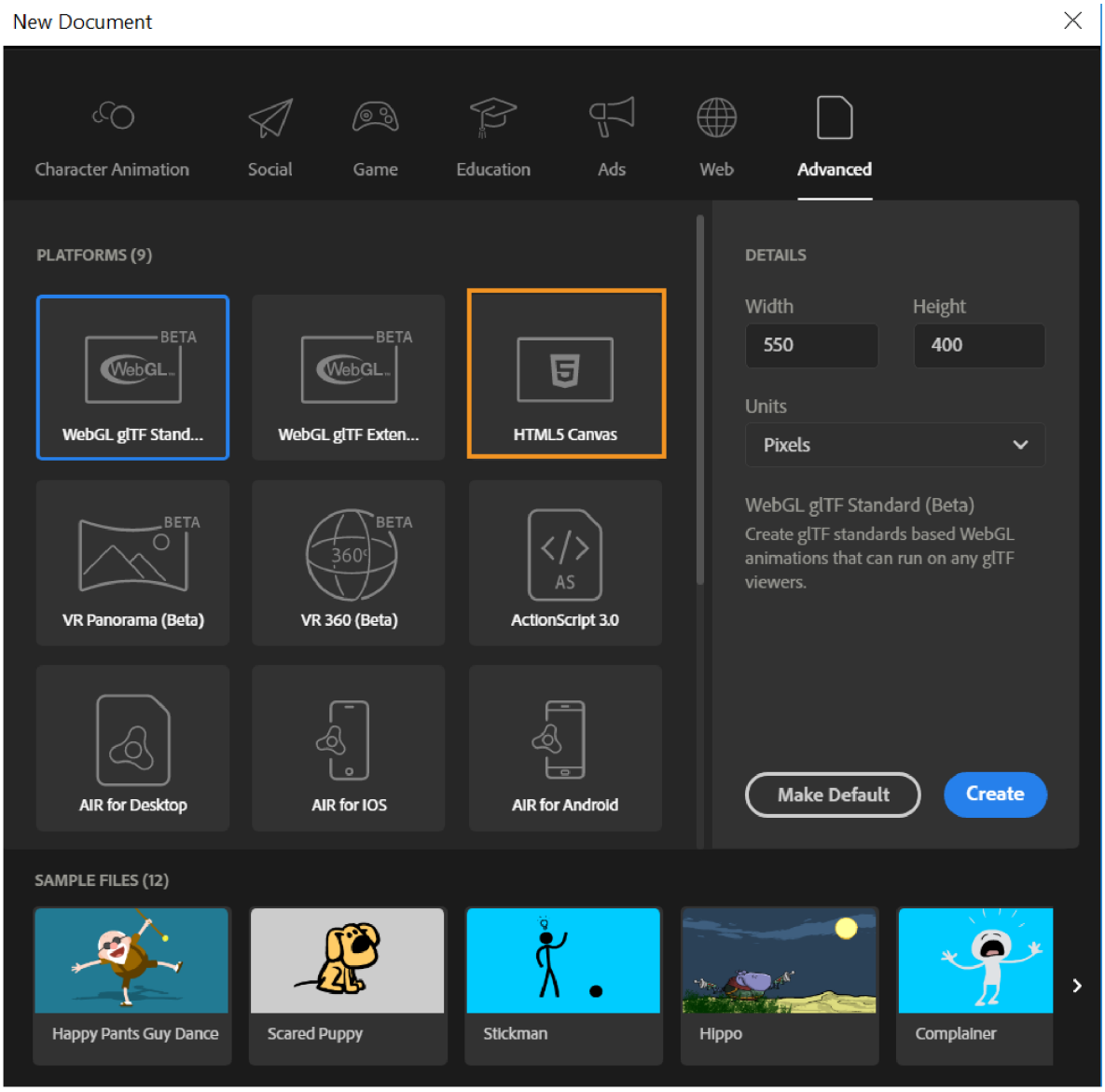
Note:

When you override APIs like attach, detach or update, evaluate the base class's default implementation and call the base implementation at appropriate time otherwise the component initialization may fail.

Using Components in HTML5 Canvas

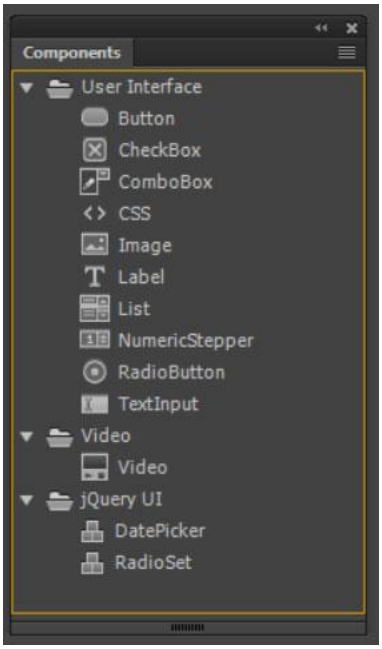
Component provides a function or group of related reusable customizable components that enhances productivity for ad creators. Previously, Animate CC supported flash components used with flash-based targets. From this release onwards, Animate supports HTML5 Canvas.

1 Select File> New > HTML5 Canvas.



HTML5 Canvas

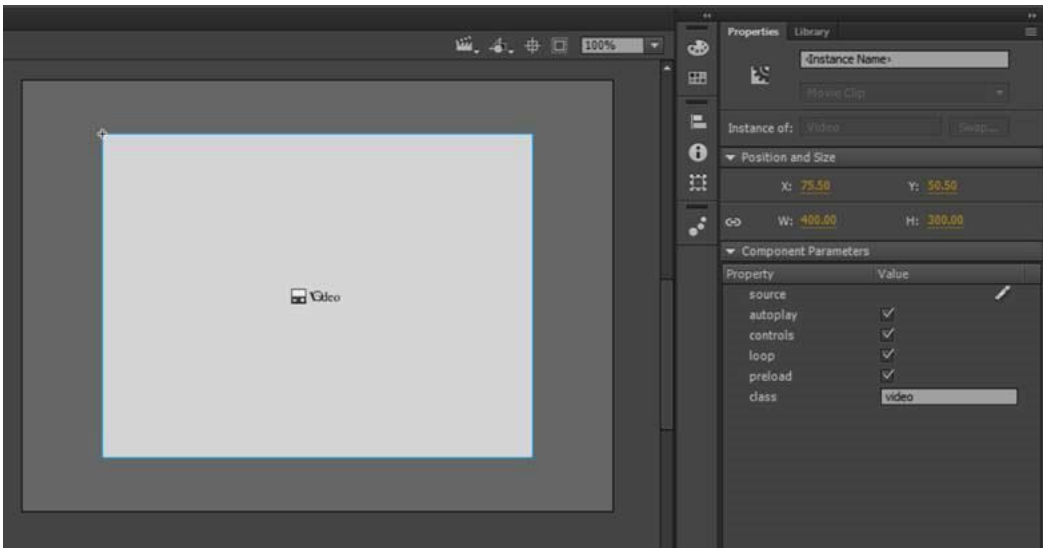
2 Select Window > Components.



Default Components

3 Select **Components** > **Video**. Drag-and-drop the associated components to the canvas.

4 Select the **Video** component Instance on stage, and view and modify parameters in the Property Inspector. The **Source** parameter allows you to select video file from a local location or provide any URL to play the video (mp4, ogg, ogv, or webm formats).

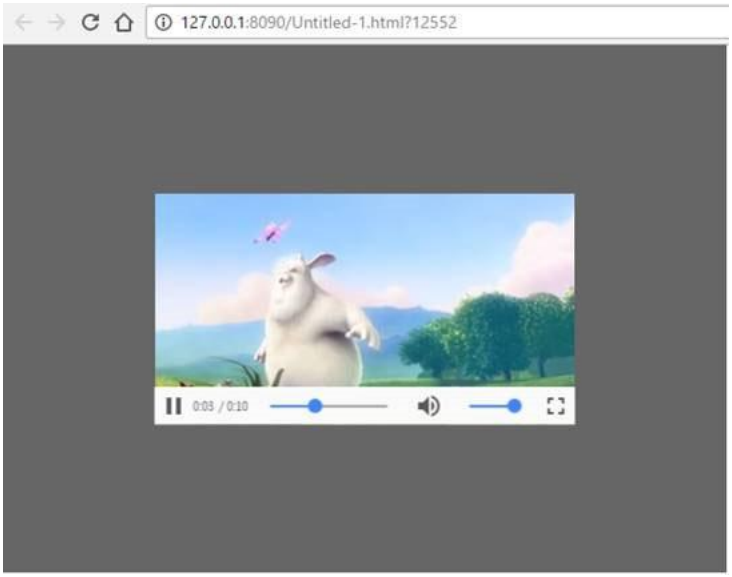


Drag-and-drop the Components

5 Select "match source dimensions" to resize the video player to match the input video dimensions. This feature only works for mp4 videos. For other video types, manually resize the video instance on stage to ensure that the aspect ratio remains the same.

6 Press Ctrl + enter (cmd + enter on MAC) to preview the movie. The video plays in your default browser. Since the controls are visible by default, you can view the controls when you hover over the video in a browser.

You can use the same procedure to use other components.



Preview component output

Note:

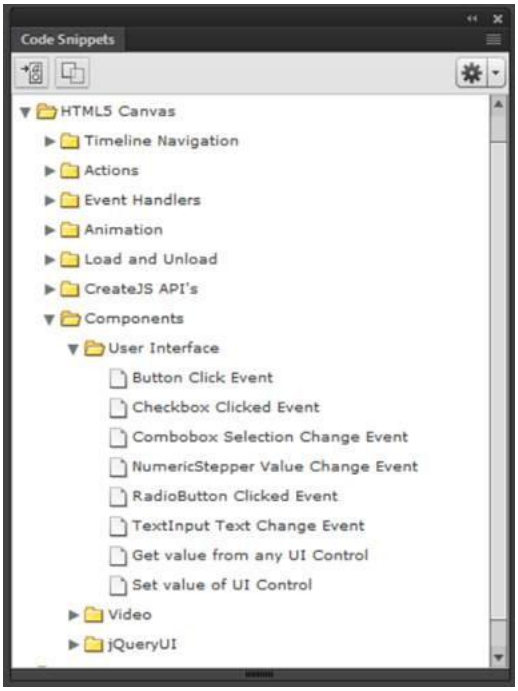
*Components are added to HTML document as DOM elements, so refer to Component code snippets (**Code Snippets** > **HTML5 Canvas** > **Components**) to add interactivity to Components.*

Adding interactivity to components using code snippets

1 Select Window > Components.

2 To add interactivity to the components, select Window > Code snippets panel. You can view the mapping of the various available component behaviors.

3 In the Code Snippet screen, select HTML5 Canvas > Components.



Default code snippets

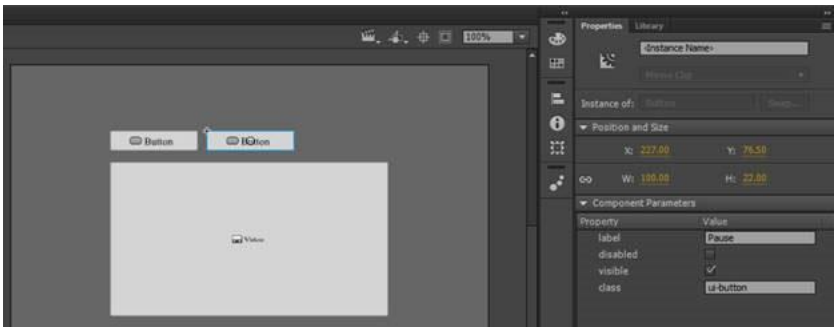
4 Based on the component you have selected, double-click the corresponding code snippet to display the snippet in the Actions panel. For information on adding interactivity to code snippets, see Add interactivity with code snippets in Animate CC.

Example

Use the following example to learn how to use code snippets where the playback of the video is controlled through code.

1 Select the video instance on stage and disable the AutoPlay setting in the Property inspector.

2 Double click the Button component twice in the Components panel to create two instances on stage and place the buttons. You can also drag-and-drop them directly from the components panel on stage.

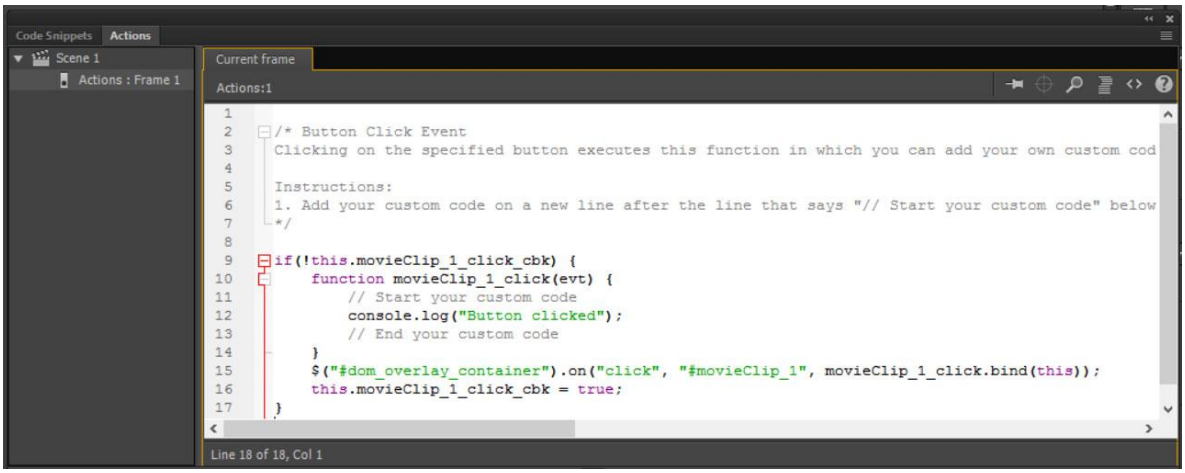


Place the buttons

3 Select the first button instance and change the label to Play in the PI and the second button to Pause.

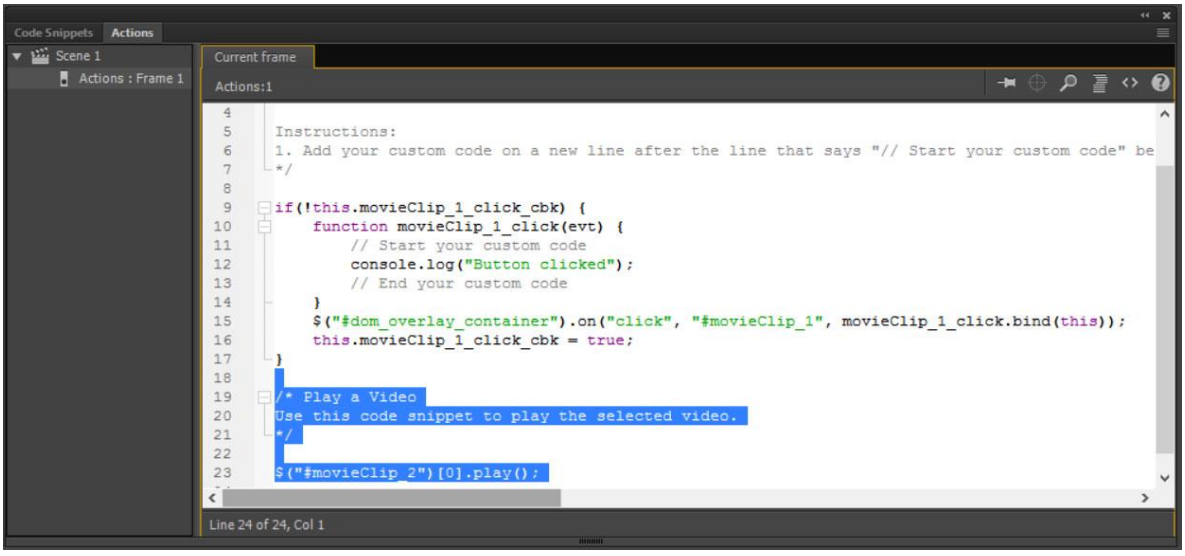
4 Open the Code Snippets Panel by clicking Window > Code Snippets. Navigate to HTML5 Canvas > Components and expand the User Interface Section.

5 Select the Play button on stage, double-click on the Button Click Event in Code Snippets Panel, and click Ok. Animate CC assigns an instance name to the selected button. You can view the newly added code in the Actions panel.


Code Snippets
Actions
Scene 1
Actions : Frame 1
Current frame
Actions:1
/* Button Click Event
Clicking on the specified button executes this function in which you can add your own custom cod
Instructions:
1. Add your custom code on a new line after the line that says "// Start your custom code" below
*/
if(!this.movieClip_1_click_cbk) {
function movieClip_1_click(evt) {
// Start your custom code
console.log("Button clicked");
// End your custom code
}
$("#dom_overlay_container").on("click", "#movieClip_1", movieClip_1_click.bind(this));
this.movieClip_1_click_cbk = true;
}
Line 18 of 18, Col 1

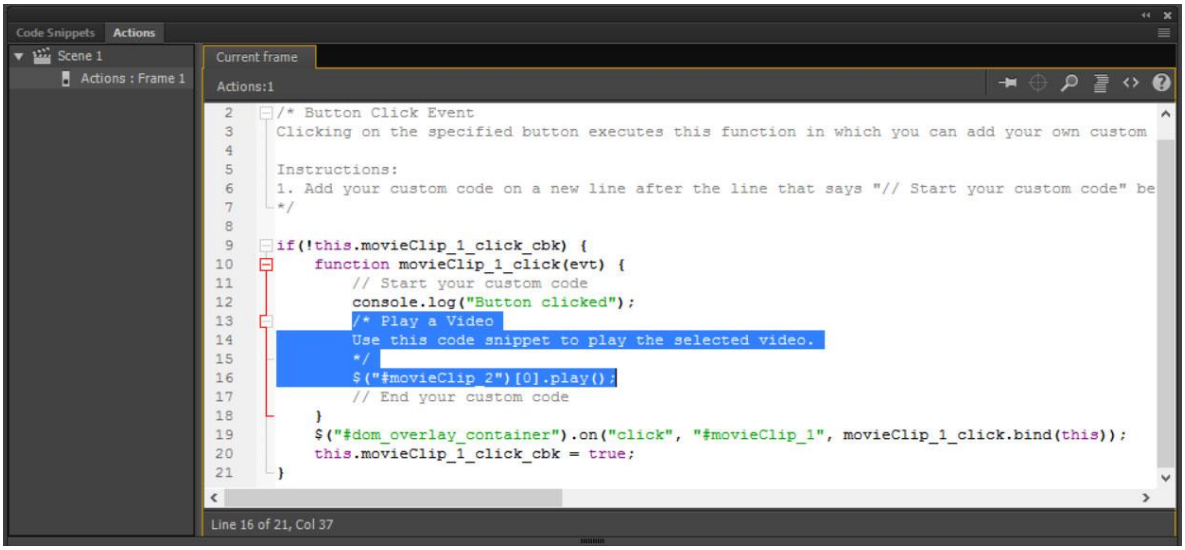
Adding code snippets

6 Select the Video on stage and expand the Video section in Code snippets. Double-click Play a Video. The code required to play the video is added to the Actions panel.



Code added to the Actions panel

7 To play the video when the button is clicked, move the code between <Start your custom code> and <End your custom code> section.


Code Snippets
Actions
Scene 1
Actions : Frame 1
Current frame
Actions:1
/* Button Click Event
Clicking on the specified button executes this function in which you can add your own custom
Instructions:
1. Add your custom code on a new line after the line that says "// Start your custom code" be
*/
if(!this.movieClip_1_click_cbk) {
function movieClip_1_click(evt) {
// Start your custom code
console.log("Button clicked");
/* Play a Video
Use this code snippet to play the selected video.
*/
$("#movieClip_2")[0].play();
// End your custom code
}
$("#dom_overlay_container").on("click", "#movieClip_1", movieClip_1_click.bind(this));
this.movieClip_1_click_cbk = true;
}
Line 16 of 21, Col 37

Move the code within the tags

8 To add a code to pause the video, select the pause button, assign the new button click handler and add the pause video code.

9 Preview the movie. Click the play button to play the video and click on the Pause button to pause the video.

Note:

You can view the className attribute for each component in the Property Inspector. Use these class names to skin the components using a CSS. Use the CSS component to load your custom CSS. The CSS component allows you to select any local CSS file included in the movie.

Install distributed components

Animate designers or developers can install the distributed **ZXP** file component by using the **Manage Extensions** utility.

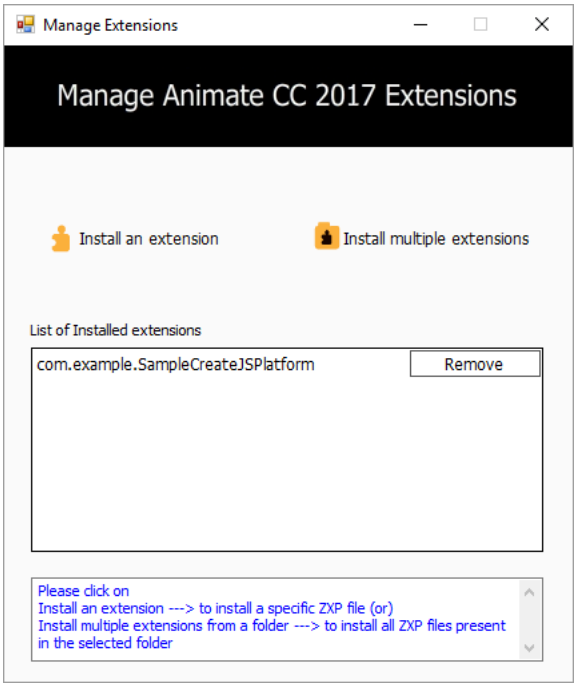
Prerequisite

Manage extensions utility. For download instructions, click **Help** > **Manage Extensions** in your Animate CC product.

Installing components

To install distributed components, you can perform the following steps:

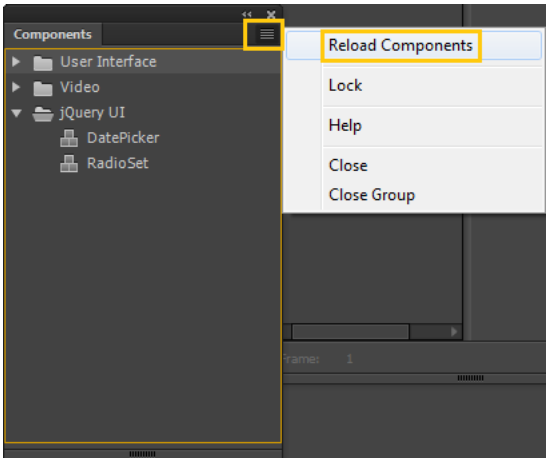
1 Double-click the **ManageExtensions.exe** file. The **Manage Extensions** dialog appears.


Manage Extensions
Manage Animate CC 2017 Extensions
Install an extension
Install multiple extensions
List of Installed extensions
com.example.SampleCreateJSPlatform
Remove
Please click on
Install an extension ---> to install a specific ZXP file (or)
Install multiple extensions from a folder ---> to install all ZXP files present in the selected folder

2 Click **Install an extension** and select the extension (.zxp file) that you want to install.

3 To view the installed component in Animate CC, click **Window > Component. Components** pop-up dialog appears.

4 Click hamburger icon at upper-right corner and click **Reload Components.**



Best practices - Advertising with Animate CC

Using recommended dimensions

Use the Interactive Advertising Bureau (IAB) guidelines to set dimensions for your Animate advertisements. The following table lists the recommended Interactive Marketing Unit (IMU) ad formats measurements:

Type of advertisement	Dimensions (pixels)
Wide skyscraper	160 x 600
Skyscraper	120 x 600
Half-page ad	300 x 600
Full banner	468 x 60
Half banner	234 x 60
Micro bar	88 x 31
Button 1	120 x 90
Button 2	120 x 60
Vertical banner	120 x 240
Square button	125 x 125
Leaderboard	728 x 90
Medium rectangle	300 x 250
Square pop-up	250 x 250
Vertical rectangle	240 x 400
Large rectangle	336 x 280
Rectangle	180 x 150

When you create a FLA file from a template (Select File > New, and click the Templates tab), you see many of these sizes.

Creating SWF file advertisements

Use these guidelines when you create advertisements:

- Optimize your graphics. Make SWF file banner advertisements 15K or smaller.
- Create a GIF banner advertisement in Animate that is 12K or smaller.
- Limit looping banner advertisements to three repetitions. Many websites adopt the standardized file size recommendations as advertising specifications.
- Use the *GET* command to pass data between an advertisement and a server, and do not use the *POST* command. For more information on GET and POST, see the getURL function in ActionScript 2.0 Language Reference.

Note:

Provide control to the user. If you add sound to an advertisement, also add a mute button. If you create a transparent Animate ad that hovers over a web page, provide a button to close the advertisement for its duration.

Tracking advertisements

Several leading advertising networks now support standardized tracking methods in Animate SWF files. The following guidelines describe the supported tracking methodology:

Create a button or movie clip button Use standardized dimensions outlined by the IAB. For a list of standardized dimensions, see the IAB website. For more information on creating a button in Animate, see Creating buttons.

Add a script to the button Executes when a user clicks the banner. You might use the *getURL()* function to open a new browser window. The following code snippets are two examples of ActionScript 2.0 code you might add to Frame 1 of the Timeline:

```
myButton_btn.onRelease = function(){
   getURL(clickTAG, "_blank");
};
```

You might add the following code to Frame 1 of the Timeline:

```
myButton_btn.onRelease = function() {
   if (clickTAG.substr(0, 5) == "http:") {
       getURL(clickTAG);
   }
};
```

The *getURL()* function adds the variable passed in the *object* and *embed* tags, and then sends the browser that is launched to the specified location. The server hosting the ad can track clicks on the advertisement. For more information on using the *getURL()* function, see *ActionScript 2.0 Language Reference*.

Assign clickTAG code for tracking Tracks the advertisement and helps the network serving the ad to track where the ad appears and when it is clicked.

The process is the standard way of creating an advertising campaign for a typical Animate advertisement. If you assign the *getURL()* function to the banner, you can use the following process to add tracking to the banner. The following example lets you append a variable to a URL string to pass data, which lets you set dynamic variables for each banner, instead of creating a separate banner for each domain. You can use a single banner for the entire campaign, and any server that is hosting the ad can track the clicks on the banner.

In the *object* and *embed* tags in your HTML, you would add code similar to the following example (where www.helpexamples.com is the ad network, and adobe.com is the company with an advertisement):

```
<EMBED src="your_ad.swf?clickTAG= http://helpexamples.com/tracking?http://www.adobe.com">
```

Add the following code in your HTML:

```
<PARAM NAME=movie VALUE="your_ad.swf?clickTAG =http:
//helpexamples.com/tracking?http://www.adobe.com">
<< this HTML stuff may need to be updated
to account for the Active content fix, which likely will cause users
to edit .js files instead of html files - JayA >>
```

Testing your ads

Test your SWF file ad on the most common browsers, especially the browsers that your target audience uses. Some users might not have Flash Player installed or they might have JavaScript disabled. Plan for these circumstances by having a replacement (default) GIF image or other scenarios for these users. For more information on detecting Flash Player, see Specify publish settings for Animate (.swf) files. Give the user control of the SWF file. Let the user control any audio in the ad. If the advertisement is a borderless SWF file that hovers over a web page, let the user close the advertisement immediately and for the duration of the ad.

For the latest information on Flash Player version penetration for different regions, go to www.adobe.com/go/fp_version_penetration.

Custom Brushes

Overview

The Brush Tool (B) in Adobe Animate CC allows you to custom-define a brush by setting parameters of the brush such as shape and angle. You can create natural artwork in your projects by customizing the brush tool to suit your drawing needs. You can choose, edit, and create a custom brush in Animate through the Property Inspector, when the brush tool is selected in the toolbox.

Choosing a custom brush

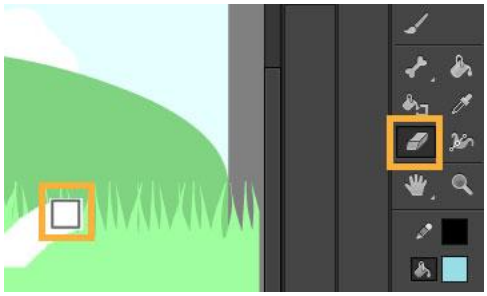
By default, the Brush tool provides you several brushes (eight preset sizes) in customized shapes to suit your various drawing needs. You can see several brush shapes when you choose the Brush Tool from the toolbox and within the "Brush" setting in Property Inspector.

You can choose a brush from the Brush drop-down list and start drawing the artwork on the stage.

New brush sizes

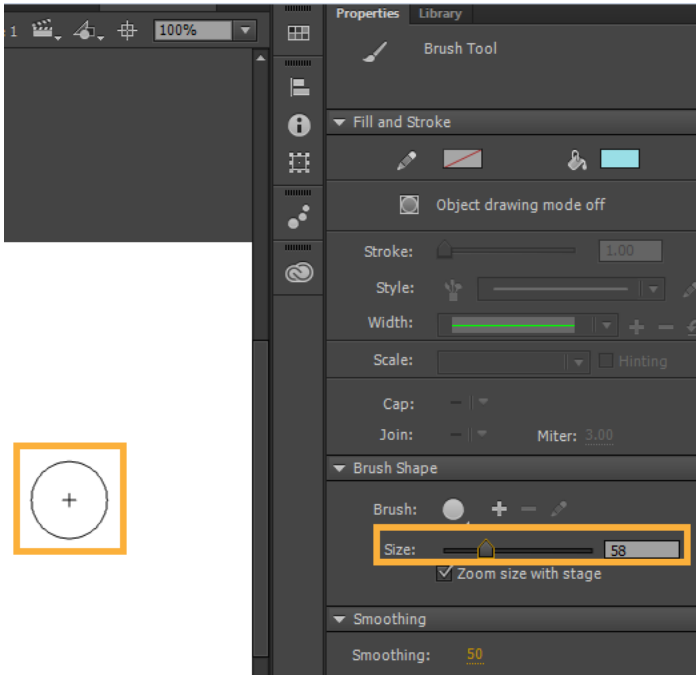
Animate CC provides a wide range of Brush sizes with more granular control and includes the following enhancements:

- New brush sizes in the range of 1-200 pixels
- Live preview when adjusting brush sizes
- Brush and Eraser tool cursors uses outline mode view and is non-obstructive when you draw in context with other artworks
- Remembers Brush settings such as last used brush size, shape, and mode across Animate sessions
- Improved drawing experience, especially for shorter brush strokes

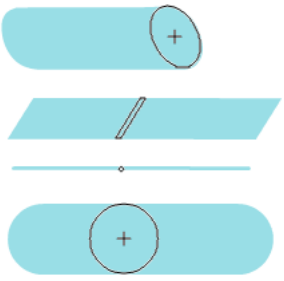


Eraser tool: cursor outline

Brush size slider



Brush size slider: live preview



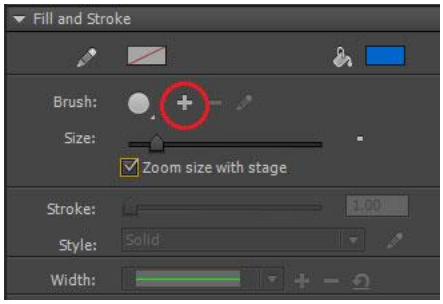
New brush cursors

When brush slider is used to select a custom brush size, other than the existing brush-size-presets, a ring icon appears on the brush size option. This indicates that you have chosen a size that is beyond the default presets.

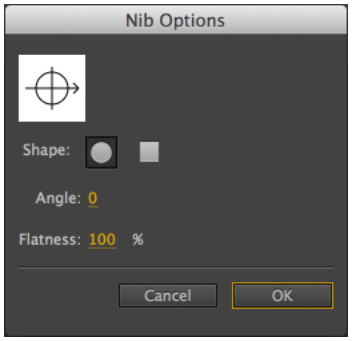
Creating a custom brush

You can create custom brushes with custom-defined size, angle, and flatness as follows:

? Click the "Brush Tool (B)" from the toolbox and click the "+" button next to the "Brush" setting in the Property Inspector.



? In the Nib Options dialog box, select a shape, specify an angle, and flatness percentage. You can see a preview of the brush as you set the parameters.



? Click OK. The new custom brush is selected in the Property Inspector as the default brush for the current document.

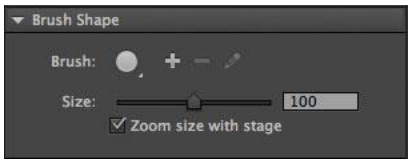
Resizing and zooming brush sizes

You can use the Zoom size with stage check box to scale the brush size proportionately to the changing zoom level of the stage. You can also draw seamlessly adjusting to any zoom level.

Disable the 'Zoom size with stage' check box in the brush Property Inspector to revert to the earlier default behavior of brushes.

You can resize the brush to the desired size by adjusting the Size option.

Use the Size slider bar to resize the brush to the desired size. You can preview and edit the value of the brush size next to the slider bar.

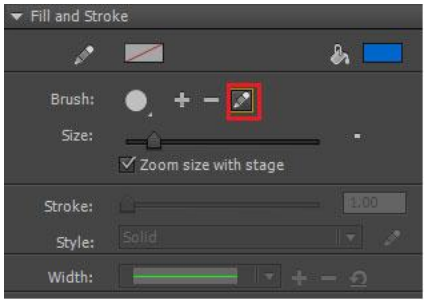


Brush size

Editing a custom brush

You can change the properties of the custom brush that you have created as follows:

? In the Property inspector, click the button with a pencil icon next to the brush options to select the custom brush that you want to modify.



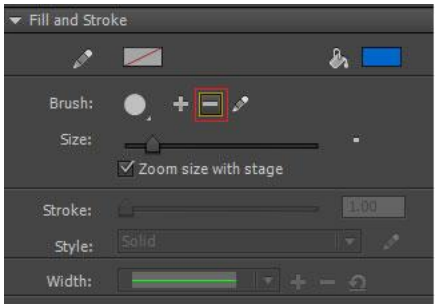
? In the Nib Options dialog box, modify the properties such as shape, angle, and flatness and click OK.

Note:

You can edit only those brushes that you have custom-created and cannot modify the properties of any of the default brushes.

Deleting a custom brush

1. To delete a custom brush you have created, select the "Brush Tool (B)" from the toolbox. Choose the custom brush that you want to delete within Fill and Stroke in the Property Inspector.
2. Click the "-" button that is enabled. The selected custom brush is deleted from the list.

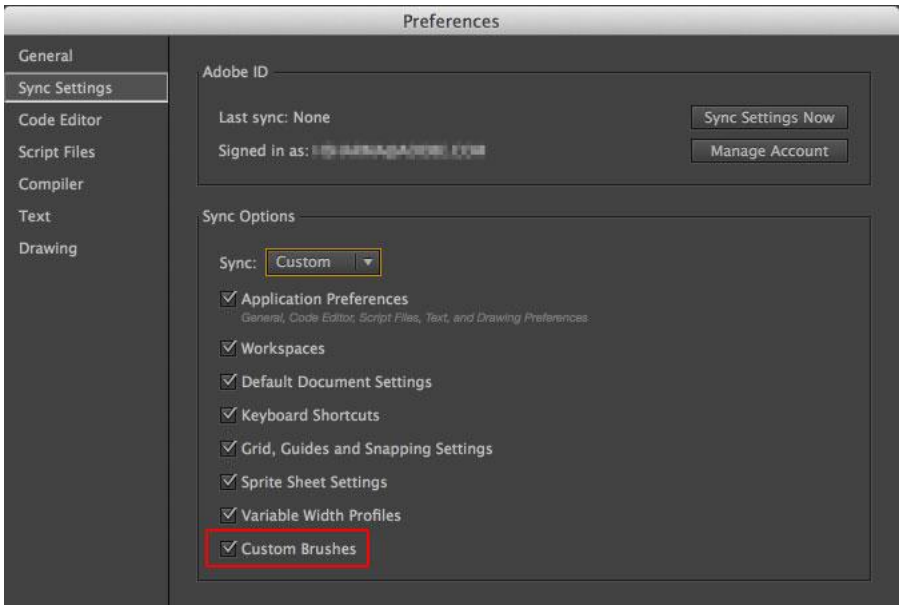


Note:

You can delete only those brushes that you have created. You are not allowed to delete the default brushes.

Synchronizing custom brushes to the cloud

Custom brushes you create can be synchronized to the cloud (your Creative Cloud account) through the Animate preferences. To do that, navigate to Edit > Preferences on Windows or Animate > Preferences on a Mac. The option to synchronize custom brushes within "Sync Settings" section is shown below:



Using property keyframes

A roving property keyframe is a keyframe that is not linked to a specific frame in the **Timeline**. Animate adjusts the position of roving keyframes so that the speed of motion is consistent throughout a tween.

Roving keyframes are available only for the spatial properties X, Y, and Z. Editing motion paths this way often creates path segments in which the motion is faster or slower than the other segments.

Use roving property keyframes to maintain a consistent animation speed throughout a tween. When property keyframes are set to roving, Animate adjusts the position of the property keyframes in the tween span. The tweened object then moves the same distance in each frame of the tween. You can then use easing to adjust the movement so that the acceleration at the beginning and end of the tween has a realistic appearance.

When you paste a custom path onto a tween, Animate sets the property keyframes to roving by default.

See Also

To enable roving keyframes for an entire tween:

- Right-click (Windows) or Command-click (Macintosh) the tween span in the **Timeline** and choose **Motion Path** > **Switch keyframes** to roving in the context menu.

To enable roving keyframes for an entire tween:

- Right-click (Windows) or Command-click (Macintosh) the property keyframe in the **Motion Editor** panel and choose roving in the context menu. For more information about the **Motion Editor**, see How to edit motion tweens using Motion Editor.

When property keyframes are set to roving, they appear as round dots instead of squares in the **Motion Editor**.

Note:

If you enable roving keyframes for a tween span and then disable them, the keyframes retain their locations in the span that resulted from enabling roving.

A motion path with roving keyframes turned off. Note the uneven distribution of frames, resulting in uneven speed of motion.

The same motion path with roving keyframes turned on, resulting in even distribution of frames along the path and even speed of motion.

Viewing and editing property keyframes of a tween span

- To view frames containing property keyframes in a span for different properties, select the span. Choose **View Keyframes** from the span context menu, and then choose the property type from the submenu.
- To remove a property keyframe from a span, Ctrl-click (Windows) or Command-click (Macintosh) the property keyframe to select it. Right-click (Windows) or Ctrl-click (Macintosh) the property keyframe. Choose **Clear Keyframe** for the property type you want to delete the keyframe for.

- To add property keyframes for a specific property type to a span, Ctrl-click (Windows) or Command-click (Macintosh) to select one or more frames in the span. Right-click (Windows) or Ctrl-click (Macintosh) and choose **Insert Keyframe** > property type from the span context menu. Animate adds property keyframes to the selected frames. You can also set a property of the target instance in a selected frame to add a property keyframe.
- To add a property keyframe for all property types to a span, place the playhead in the frame where you want to add the keyframe. Choose **Insert** > **Timeline** > **Keyframe**, or press F6.
- To reverse the direction of motion of a tween, choose **Motion Path** > **Reverse Path** from the span context menu.
- To change a tween span to static frames, select the span and choose **Remove Tween** from the span context menu.
- To convert a tween span to a frame-by-frame animation, select the span and choose **Convert to Frame by Frame Animation** from the span context menu.
- To move a property keyframe to a different frame, Ctrl-click (Windows) or Command-click (Macintosh) the property keyframe. Drag the property keyframe to the new location.
- To copy a property keyframe to another location in the tween span, Ctrl-click (Windows) or Command-click (Macintosh) the property keyframe. Use Alt-drag (Windows) or Option-drag (Macintosh) the property keyframe to the new location.

Adding or removing 3D property keyframes in a tween

- Do one of the following:
  - Add 3D properties using the 3D tools in the Tools panel.
  - Right-click (Windows) or Ctrl-click (Macintosh) the tween span in the Timeline and choose 3D tween from the context menu.
  - If the tween span contained no 3D property keyframes, Animate adds them to each existingX and Y position and rotation property keyframe. If the tween span already contained 3D property keyframes, Animate removes them.

Motion tween and ActionScript 3.0

Copy the properties that define a motion tween in the **Timeline** as ActionScript 3.0 and apply that motion to another symbol. Apply the motion either in the **Actions** panel or in the source files (such as class files) that uses ActionScript 3.0.

Use the fl.motion classes to customize the Animate-generated ActionScript for your specific project.

Copying motion as an ActionScript 3.0

When you copy a motion as an ActionScript 3.0, it captures the following properties of a motion tween:

- Position
- Scale
- Skew
- Rotation
- Transformation point
- Color
- Blend Mode
- Orientation to path

- Cache as a bitmap setting
- Easing
- Filters
- 3D rotation and position

? Select the tween span in the **Timeline** or the object on the **Stage** that contains the motion tween to copy. Only one tween span or tweened object can be selected to copy as ActionScript 3.0.

? Do one of the following:

- Select **Edit** > **Timeline** > **Copy Motion As ActionScript 3.0.**
- Right-click (Windows) or Control-click (Macintosh) the tween span or the tweened instance on the **Stage** and choose **Copy Motion As ActionScript 3.0.**

See also

Creating motion tween animations

Editing the motion path of a tween animation

Creating and applying motion presets

Setting up tween spans

Adding custom eases

Working with motion tweens saved as XML files

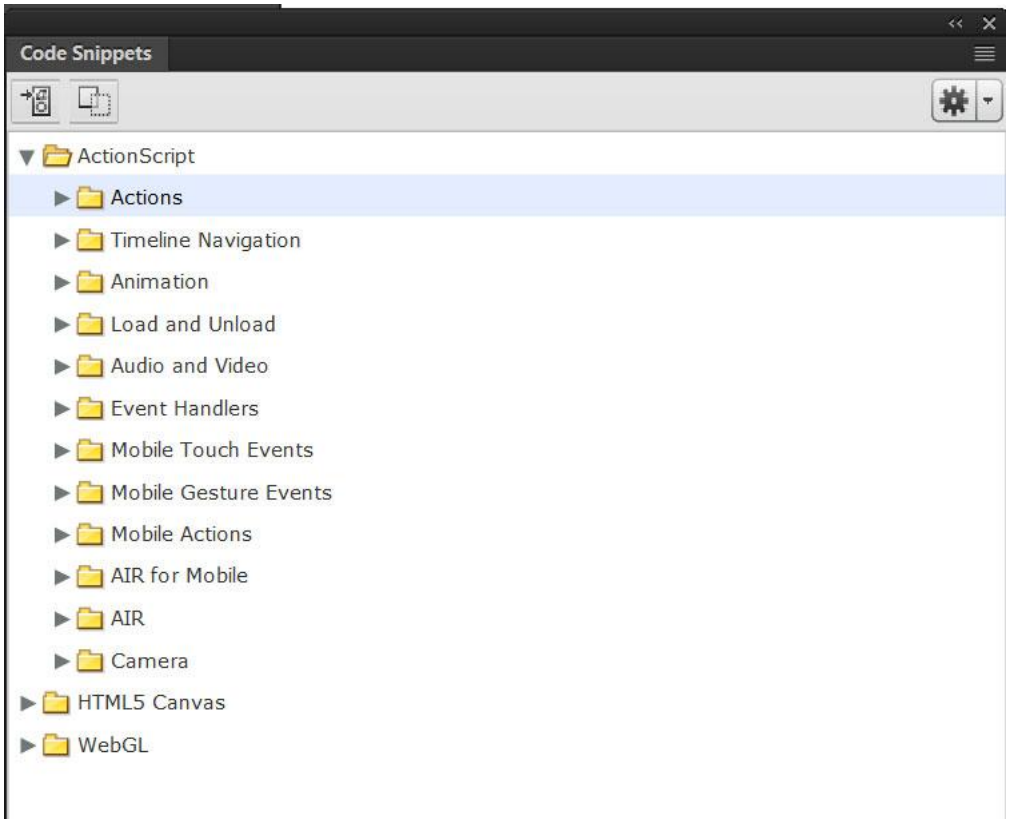
Add interactivity with code snippets in Animate CC

The Code Snippets panel is designed to make it easy for non-programmers to start using simple JavaScript and ActionScript 3.0 quickly. It lets you add code to your FLA file to enable common functionality. Using the Code Snippets panel does not require knowledge of JavaScript or ActionScript 3.0.

With the Code Snippets panel, you can:

- Add code that affects the behavior of an object on the Stage
- Add code that controls the movement of the playhead in the Timeline
- (CS5.5 only) - Add code that allows touchscreen user-interaction
- Add new code snippets that you create to the panel

Using the code snippets included with Animate is also a good way to begin learning JavaScript or ActionScript 3.0. By looking at the code in the snippets and following the snippet instructions, you can begin understanding code structure and vocabulary.



Code snippets option in Animate CC

Before you begin

When working with the Code Snippets panel, it is important to understand these fundamentals of Animate:

- Many of the code snippets require you to customize a few items in the code. In Animate, you can do this in the Actions panel. Each snippet contains specific instructions for this task.
- All of the included code snippets are either JavaScript or ActionScript 3.0.
- Some snippets affect the behavior of an object, allowing it to be clicked or causing it to move or disappear. You apply these snippets to the object on the Stage.
- Some snippets cause an action to occur immediately when the playhead enters the frame that contains the snippet. You apply these snippets to a Timeline frame.
- When you apply a code snippet, the code is added to the current frame of the Actions layer in the Timeline. If you have not created an Actions layer yourself, Animate adds one above all other layers in the Timeline.
- For ActionScript to control an object on the Stage, the object must have an instance name assigned in the Property inspector.
- You can click the Show Description and Show Code buttons that appear when you select a snippet in the panel.

Add a code snippet to an object or Timeline frame

To add an action that affects an object or the playhead:

1 Select an object on the Stage or a frame in the Timeline.

If you select an object that is not a symbol instance, Animate converts the object to a movie clip symbol when you apply the snippet.

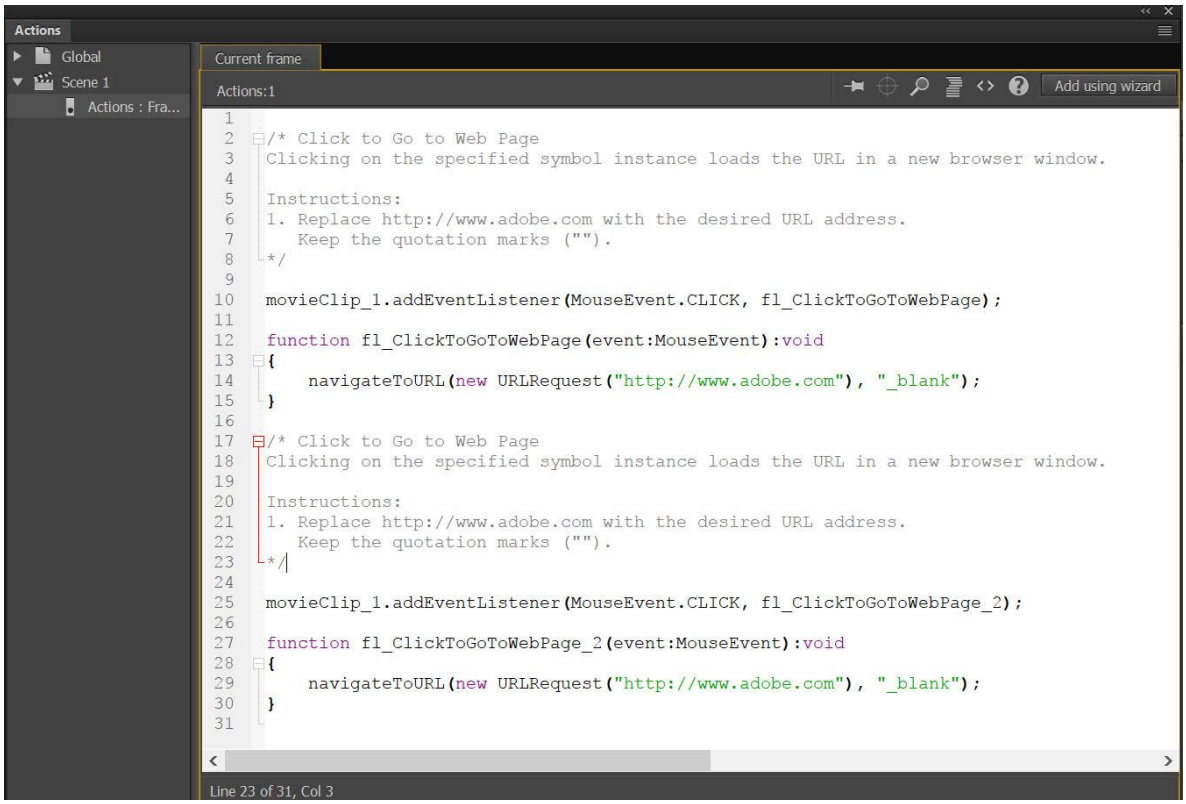
If you select an object that does not already have an instance name, Animate adds one when you apply the snippet.

2 In the Code Snippets panel (**Window > Code Snippets**), double-click the snippet you want to apply.

If you selected an object on the stage, Animate adds the snippet to the Actions panel in the frames containing the selected object.

If you selected a Timeline frame, Animate adds the snippet to just that frame.

3 In the **Actions** panel, view the newly added code and replace any necessary items according to the instructions at the top of the snippet.



Code snippet in actions panel

Add new snippets to the Code Snippets panel

You can add new code snippets to the Code Snippets panel in two ways:

- Enter a snippet in the **Create New Code Snippet** dialog box.
- Import a code snippet XML file.

To use the Create New Code Snippet dialog box:

1 In the Code Snippets panel, choose Create New Code Snippet from the panel menu.

2 In the dialog box, Enter the Title, Tool tip text, and JavaScript or ActionScript 3.0 code for your snippet.

You can add any code that is currently selected in the Actions panel by clicking the Auto-Fill button.

3 Select the Automatically replace instance_name_here check box if your code includes the string "instance_name_here" and you want Animate to replace it with the correct instance name when the snippet is applied.

Animate adds the new snippet to the Code Snippets panel in a folder called Custom.

To import a code snippet in XML format:

1 In the Code Snippets panel, choose Import Code Snippets XML from the panel menu.

2 Select the XML file you want to import and click Open

To see the correct XML format for code snippets, choose Edit Code Snippets XML from the panel menu.

To delete a code snippet, right-click the snippet in the panel and choose Delete Code Snippet from the context menu.

Adding custom eases

Easing refers to the gradual acceleration or deceleration during an animation, which helps your tweens appear more realistic or natural. Use easing to apply a special movement that makes animation tasks, such as "random" movement or a ball bouncing. You can apply eases to add a more natural appearance of acceleration or deceleration by gradually adjusting the rate of change using a gentle ease curve. You can add eases to create a random appearance to one of your properties, such as x and y for random jittery movement.

Adding preset and custom eases to motion tweens

Animate CC provides two methods to apply easing to a motion tween.

- You can specify an easing value for each motion tween using the Ease slider in the Motion Property inspector.
- You can use the Motion Editor to apply either a preset or custom ease to one or more properties.

Applying easing to a motion tween using the Motion Property inspector:

1 Create a file named **motionease.fla**.

2 Create a graphic with any of the drawing tools, select all the graphics, and then right/Control-click and choose Create Motion Tween. Click OK to convert the drawing into a symbol. One second of frames are added to the timeline, but if necessary, drag the end of the tween span so it's at least 24 frames long.

3 Move the playhead to the last frame of the tween span, and then move the instance to another location on the Stage.

4 Select the tween span and drag the Ease hot text (blue text next to "Ease") in the Motion Property inspector. You can also type in a value to adjust the rate of change between tweened frames.

5 To begin the motion tween, and accelerate the tween toward the end of the animation:

- Drag the hot text to enter a negative value from –1 through –100.
- Drag the hot text to enter a positive value from 1 through 100.

6 Select Control > Test Movie to test the animation. Notice how the tween dots update on the Stage in the authoring environment after you apply the ease.

? Scroll down to the Ease section, and change the number of bounces to **5**.

See also

Creating a motion tween animation

Creating and applying motion presets

Motion script and ActionScript 3.0

Animating position with a tween

Manipulating motion tweens

Motion tweens vs classic tweens

Eases in the Motion Editor

After you apply any ease to a graphable property, any hot text in the Value category is dimmed. The easing equation controls the hot text (tweened values) and there are limitations to what that value can be. Instead, edit the solid curve in the graph using the control points or other Bezier editing tools. Alternatively, you can disable the ease and use the hot text controls, then re-enable the ease and see the outcome of your changes.

Adding a custom ease to a motion tween

Use custom easing to create your own ease using a graph in the Motion Editor. You can also apply the custom ease to any property of your tweened instance.

The Custom ease graph represents the degree of motion over time. Horizontal axis represents the frames and the vertical axis represents the tween's percentage of change. The first value in the animation is 0%, and the last keyframe can be set from 0 through 100%. The slope of the graph's curve shows the rate of change of the tweened instance. If you create a horizontal line (no slope) on the graph, the velocity is zero. If you create a vertical line on the graph, there is an instantaneous rate of change.

1 Create a motion tween.

2 Select the tween span in the Timeline and open the Motion Editor.

3 Scroll to the Eases category, click the Add button, and then select Custom from the menu.

Modifying and applying a custom ease

You can then edit the custom ease using the standard Bezier editing controls found in other property graphs in the Motion Editor. Use this feature to create a custom curve that you can use to ease between keyframes.

To apply the custom ease to a property, select the custom ease's name from the Ease menu. The property graph updates with a dashed curve that displays the actual tweened values after the ease is applied.

Copying and saving custom eases

Use any of the following methods to reuse your custom eases on other tween instances, or even in other documents:

- Right-click the custom ease graph (outside the graph's curve) and choose Copy Curve. Then on the second instance, add a custom ease, and right-click in the custom ease graph and choose Paste Curve. You can paste the graph to any other non-spatial property graph.
- Save the custom ease in a Motion Preset.

Animate position with a tween

When you add a tween to an object on a layer, Animate does one of the following:

- It converts the layer to a tween layer.
- It creates a layer to preserve the original stacking order of the objects on the layer.

Layers are added according to these rules:

- If there are no objects on the layer other than the selection, the layer changes to a tween layer.
- If the selection is at the bottom of the stacking order of the layer (under all other objects), Animate creates a layer above the original layer. This new layer holds the non-selected items. The original layer becomes a tween layer.
- If the selection is at the top of the stacking order of the layer (above all other objects), Animate creates a layer. The selection is moved to the new layer and that layer becomes a tween layer.
- If the selection is in the middle of the stacking order of the layer (there are objects above and below the selection), Animate creates two layers. One layer holds the new tween and another one above it holds the non-selected items at the top of the stacking order. The non-selected items at the bottom of the stacking order remain on the original layer, below the newly inserted layers.

A tween layer can contain tween spans, static frames, and ActionScript. However, frame of a tween layer that contains a tween span cannot contain objects other than the tweened object. To add more objects in the same frame, place them on separate layers.

See also

Creating a Motion tween animation

Creating and applying motion presets

Setting up animation tween spans

Adding custom eases

Motion tweens vs classic tweens

Using property keyframes

Tween an object across the timeline

To make an object move or slide across the **Stage**:

1 Select a symbol instance or a text field to tween on the **Stage**. The object can reside in any of the following layer types: **Normal**, **Guide**, **Mask**, or **Masked**. If the selection contains other objects, or it contains multiple objects from a layer, Animate convertd your selection to a movie clip symbol.

2 To invert the selection, right-click the object and select Invert Selection.

3 Do one of the following:

- Choose Insert > Motion Tween.
- Right-click (Windows) or Ctrl-click (Macintosh) the selection or current frame and chooseCreate Motion Tween from the context menu.

If the "Convert selection to symbol for tween" dialog box appears, click OK to convert the selection into a movie clip symbol.

If the tweened object was the only item on the layer, Animate converts the layer containing the object to a tween layer. If there are other objects on the layer, Animate inserts layers to preserve the stacking order. Animate places the tweened object on its own layer.

If the original object resided in only the first frame of the Timeline, the length of the tween span is equal to one second in duration. If the original object was present in more than one contiguous frame, the tween span contains the number of frames occupied by the original object.

4 Drag either end of the tween span in the **Timeline** to shorten or extend the span to the desired number of frames. Any existing property keyframes in the tween move proportionally with the end of the span.

To move the end of the span without moving any existing keyframes, Shift-drag the end of the tween span.

5 To add motion to the tween, place the playhead on a frame within the tween span and then drag the object to a new position.

A motion path appears on the **Stage** showing the path from the position in the first frame of the tween span to the new position. Because you explicitly defined the X and Y properties of the object, property keyframes are added for X and Y in the frame containing the playhead. Property keyframes appear as small diamonds in the tween span.

*By default, the **Timeline** displays the property keyframes of all property types. You can choose which types of property keyframes to display by right-clicking (Windows) or Command-clicking (Macintosh) the tween span and choosing **View Keyframes** > property type.*

6 To specify another position for the object, place the playhead in another frame within the tween span and drag the object on **Stage** to another position.

The motion path adjusts to include all the positions you specify.

7 To tween 3D rotation or position, use the **3D Rotation** or **3D Translation** tool. Be sure to place the playhead in the frame where you want to add the 3D property keyframe first.

Note:

*To create multiple tweens at once, place tweenable objects on multiple layers, select them all, and choose **Insert** > **Motion Tween**. You can also apply Motion Presets to multiple objects in the same way.*

Animation basics in Animate CC

Note:

Like most things in Animate CC (formerly Flash Professional CC), animation does not require any ActionScript. However, you can create animation with ActionScript if you choose.

Types of animation

Animate CC provides several ways to create animation and special effects. Each method provides you with different possibilities for creating engaging animated content.

Animate supports the following types of animation:

Motion tweens Use motion tweens to set properties for an object, such as position and alpha transparency in one frame and again in another frame. Animate then interpolates the property values of the frames in between. Motion tweens are useful for animation that consists of continuous motion or transformation of an object. Motion tweens appear in the Timeline as a contiguous span of frames that can be selected as a single object by default. Motion tweens are powerful and simple to create.

Classic tweens Classic tweens are like motion tweens, but are more complex to create. Classic tweens allow for some specific animated effects not possible with span-based tweens.

Inverse Kinematics poses (deprecated with Animate CC) Inverse kinematic poses allow you to stretch and bend shape objects and link groups of symbol instances to make them move together in naturalistic ways. Once you have added bones to a shape or a group of symbols, you can change the position of the bones or symbols in different keyframes. Animate interpolates the positions in the in-between frames.

Shape tweens In shape tweening, you draw a shape at one specific frame in the Timeline, and change that shape or draw another shape at another specific frame. Animate then interpolates the intermediate shapes for the frames in between, creating the animation of one shape morphing into another.

Frame-by-frame animation This animation technique lets you specify different art for each frame in the Timeline. Use this technique to create an effect that is like the frames of a film being played in rapid succession. This technique is useful for complex animation where the graphic elements of each frame must be different.

About frame rates

The frame rate, the speed the animation is played at, is measured in number of frames per second (fps). A frame rate that's too slow makes the animation appear to stop and start; a frame rate that's too fast blurs the details of the animation. A frame rate of 24 fps is the default for new Animate documents and usually gives the best results on the web. The standard motion-picture rate is also 24 fps.

The complexity of the animation and the speed of the computer playing the animation affect the smoothness of the playback. To determine optimum frame rates, test your animations on a variety of computers.

Because you specify only one frame rate for the entire Animate document, set this rate before you begin creating animation.

Identifying animations in the Timeline

Animate distinguishes tweened animation from frame-by-frame animation in the Timeline by displaying different indicators in each frame that contains content.

The following frame content indicators appear in the Timeline:

- A span of frames with a blue background indicates a motion tween. A black dot in the first frame of the span indicates that the tween span has a target object assigned to it. Black diamonds indicate the last frame and any other property keyframes. Property keyframes are frames that contain property changes explicitly defined by you. You can choose which types of property keyframes to display by right-clicking (Windows) or Command-clicking (Macintosh) the motion tween span and choosing View Keyframes > type from the context menu. Animate displays all types of property keyframes by default. All other frames in the span contain interpolated values for the tweened properties of the target object.

- A hollow dot in the first frame indicates that the target object of the motion tween has been removed. The tween span still contains its property keyframes and can have a new target object applied to it.

- A span of frames with a green background indicates an inverse kinematics (IK) pose layer. Pose layers contain IK armatures and poses. Each pose appears in the Timeline as a black diamond. Animate interpolates the positions of the armature in the frames in between poses.

- A black dot at the beginning keyframe with a black arrow and blue background indicates a classic tween.

- A dashed line indicates that the classic tween is broken or incomplete, such as when the final keyframe is missing.

- A black dot at the beginning keyframe with a black arrow and a light green background indicates a shape tween.

- A black dot indicates a single keyframe. Light gray frames after a single keyframe contain the same content with no changes. These frames have a vertical black line and a hollow rectangle at the last frame of the span.

- A small a indicates that the frame is assigned a frame action with the Actions panel.

- A red flag indicates that the frame contains a label.

- A green double slash indicates that the frame contains a comment.

- A gold anchor indicates that the frame is a named anchor.

About layers in tweened animation

Each scene in a Animate document can consist of any number of Timeline layers. Use layers and layer folders to organize the contents of an animation sequence and separate animated objects. Organizing them in layers and folders prevents them from erasing, connecting to, or segmenting each other when they overlap. To create animation that includes tweened movement of more than one symbol or text field at once, place each object on a separate layer. You can use one layer as a background layer to contain static artwork and use additional layers to contain one separate animated object.

When you create a motion tween, Animate converts the layer containing the object you selected to tween into a tween layer. The tween layer has a tween icon next to the layer name in the Timeline.

If other objects are present on the same layer as the tweened object, Animate adds new layers above or below the original layer as needed. Any objects that existed below the tweened object on its original layer move to a new layer below the original layer. Any objects that were above the tweened object on its original layer move to a new layer above the original layer. Animate inserts these new layers between any pre-existing layers in the Timeline. In this way Animate preserves the original stacking order of all the graphic objects on the Stage.

A tween layer can contain only tween spans (contiguous groups of frames containing a tween), static frames, blank keyframes, or empty frames. Each tween span can contain only a single target object and an optional motion path for the target object. Because you cannot draw in a tween layer, create additional tweens or static frames on other layers and then drag them to the tween layer. To place frame scripts on a tween layer, create them on another layer and drag them to the tween layer. A frame script can only reside in a frame outside the motion tween span itself. In general, it is best to keep all frame scripts on a separate layer that contains only ActionScript.

When a document has several layers, tracking and editing the objects on one or more of them can be difficult. This task is easier if you work with the contents of one layer at a time. To hide or lock layers you are not currently working on, click the Eye or Lock icon next to the layer name in the Timeline. Using layer folders can help you organize layers into manageable groups.

Distributing objects to layers for tweened animation

Animate automatically moves an object to its own tween layer when you apply a motion tween to the object. However, you can also distribute objects to their own separate layers yourself. For example, you can choose to distribute objects yourself when you are organizing content. Manual distribution is also useful for applying animation to objects while maintaining precise control over how they move from one layer to another.

When you use the Distribute To Layers command (Modify > Timeline > Distribute To Layers), Animate distributes each selected object to a new, separate layer. Any objects that you don't select (including objects in other frames) are preserved in their original layers.

You can apply the Distribute To Layers command to any element on the Stage, including graphic objects, instances, bitmaps, video clips, and broken-apart text blocks.

About new layers created with Distribute to Layers

New layers created during the Distribute To Layers operation are named according to the name of the element that each contains:

- A new layer containing a library asset (such as a symbol, bitmap, or video clip) receives the same name as the asset.
- A new layer containing a named instance receives the name of the instance.
- A new layer containing a character from a broken-apart text block is named with the character.
- A new layer containing a graphic object (which has no name) is named Layer1 (or Layer2, and so on), because graphic objects do not have names.

  Animate inserts the new layers below any selected layers. The new layers are arranged top to bottom, in the order that the selected elements were originally created. The layers in broken-apart text are arranged in the order of the characters, whether left-to-right, right-to-left, or top-to-bottom. For example, suppose you break apart the text FLASH and distribute it to layers. The new layers, named F, L, A, S, and H, are arranged top to bottom, with F at the top. These layers appear immediately below the layer that initially contained the text.

Distribute objects to layers

1. Select the objects you want to distribute to separate layers. The objects can be in a single layer, or in several layers, including non-contiguous layers.
2. Do one of the following:
   - Select Modify > Timeline > Distribute To Layers.
   - Right-click (Windows) or Control-click (Macintosh) one of the selected objects, and select Distribute To Layers.

Creating tweened animations by distributing objects to keyframes

New in Animate CC

Animate automatically allows you to distribute objects to separate keyframes each. You can choose to distribute objects when you are organizing content on stage. Manually, the process is tedious and time-consuming. Distribution is highly useful when creating tweened animation by placing objects on individual keyframes. You could assign different objects or object states to individual keyframes each. In effect, when the playhead is scrubbed across these keyframes, the effect of a tweened animation is apparent.

When you use the Distribute To Keyframes command, Animate distributes each selected object to a new, separate keyframe. Any objects that you don't select (including objects in other frames) are preserved in their original layers.

You can apply the Distribute To Keyframes command to any element on the Stage, including graphic objects, instances, bitmaps, video clips, and text blocks.

About new keyframes created with Distribute to Keyframes

- New keyframes created during the Distribute To Keyframes operation are arranged according to the sequence in which the objects were selected.
- If any object on the layer was left unselected when performing the Distribute to Keyframes operation, the original frames stay unaffected for such objects. The objects that are selected for distribution are assigned keyframes starting the frame immediately next to the last frame of the original content. For example, if *Object1* and *Object2* are on a layer that has 50 frames. If *Object1* was chosen for distribution, it is placed on the 51st keyframe.

Distribute objects to keyframes

1. Select the objects you want to distribute to separate layers. The objects can be in a single layer, or in several layers, including non-contiguous layers.
2. Right-click (Windows) or Control-click (Macintosh) one of the selected objects, and select Distribute To Keyframes.

Video

Additional resources

The following article talks about working with animation in Animate:

- How to Lip Sync a Character in Animate (Length = 2:30, YouTube.com)

Animation Guide

Overview

The animation guide in Adobe Animate CC (formerly Flash Professional CC) helps you enhance the animation you create by defining a path for the objects you animate. This is helpful when you are working on an animation that follows a path that is not a straight line. This process requires two layers to carry out an animation:

- A layer containing the object that you are about to animate
- A layer defining the path, which the object is supposed to follow during the animation

Animation guide works only on Classic Tweens.

For more information on Animation Guides, see Creating a motion guide layer

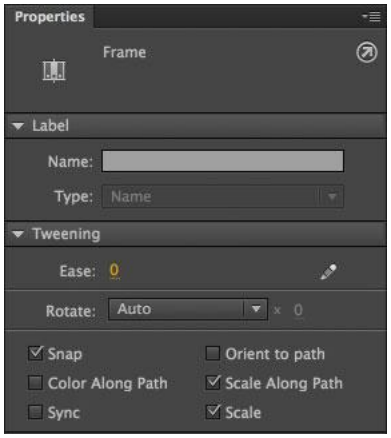
Animation Guide based on variable stroke width

You can animate an object based on the variable thickness of the stroke of the guide path.

Apart from the keyframes for the initial and final positions of the object, you do not need any other keyframes to denote the variation in stroke thickness.

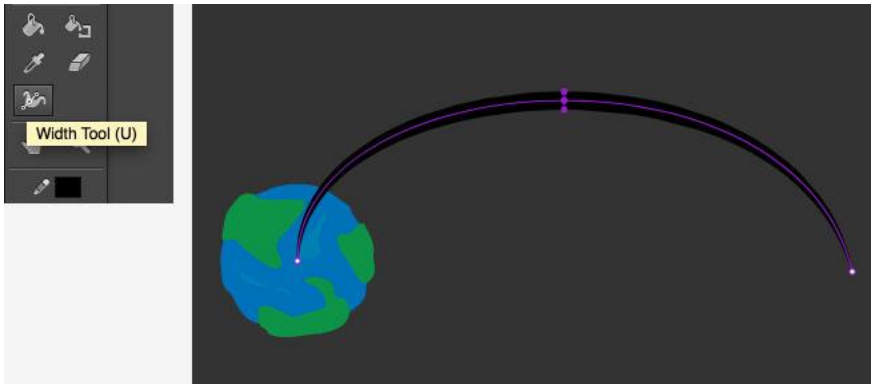
1 To animate an object based on variable stroke width, create a path and animate the object along the path as explained in the previous section of this document.

2 With the first keyframe of the tween selected in the timeline, select the options Scale and Scale along path check boxes in the Property Inspector. Now the object is ready to follow the scaling based on the stroke thickness.

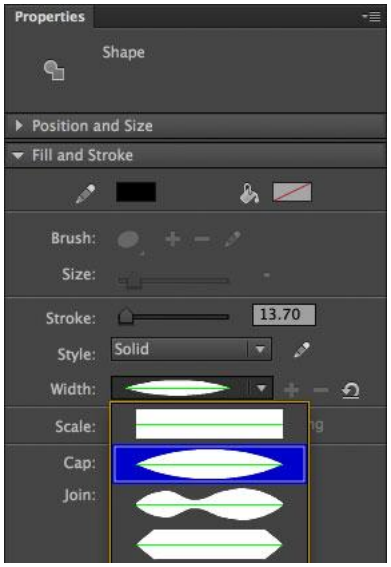


? Define the thickness of the stroke using one of the following methods:

• Choose the Width Tool (U) from the Toolbox, click anywhere on the path, and drag to vary the thickness of the path.



• Select the path using the Selection Tool (V) from the toolbox and in the Property Inspector, choose a width profile for the stroke from the Width drop down option.



For more information on variable width stroke, see Variable Width Strokes.

Once you have a variable width stroke defined as a path, if you run the motion tween, you can see that the object not only follows the path, but also changes its size based on the relation to the variation in the thickness of the stroke.

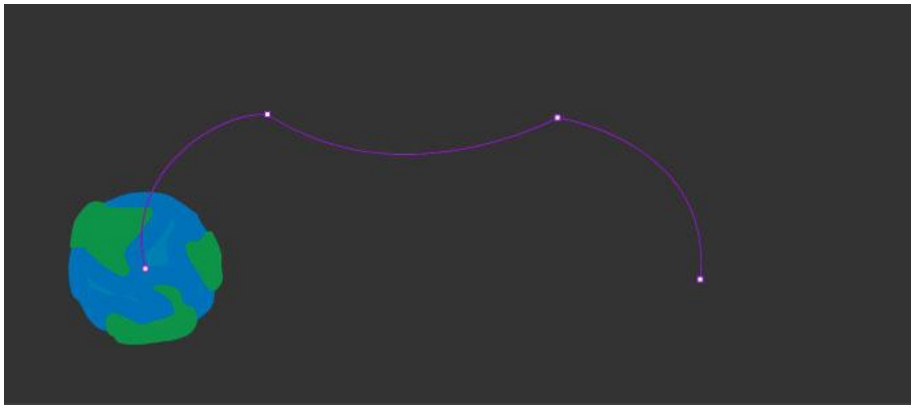
Here is an example that uses Animation Guide with variable width stroke:

A motion guide path can have multiple segment with each connected segment having a different variable width profile specified as shown below. With no additional keyframes for the object, each segment's width profile is considered during the animation.

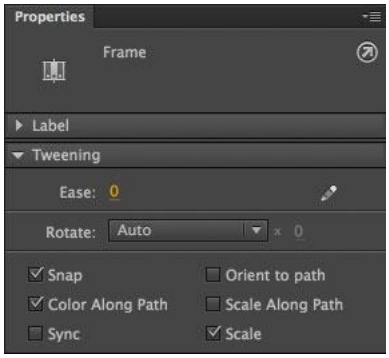
Animation Guide based on the stroke color

Animation Guide also enables you to tween an object along the path, by changing the color of the object based on the color of the guide path itself. To bring about this variation, you need at least two segments in the path, that is, three minimum nodes or points as part of the path. To achieve this, while creating a Classic Motion Tween and drawing a guide path as described in the previous section of this document, use the pen tool and draw a guide path as shown below. This path has four nodes/points in three segments.

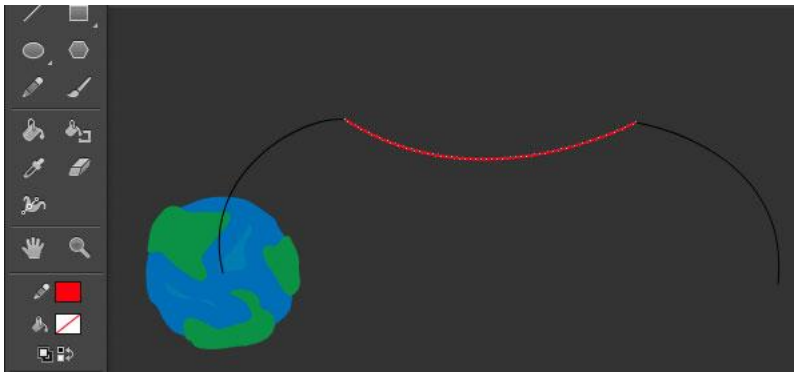
Apart from the keyframes for the initial and final positions of the object, there is no need to create any more keyframes to denote the variation in stroke color.



? Once you create Classic Motion Tween, select the first keyframe of the tween in the Timeline. In the Property Inspector, check the Color along the path check box. Your object is now ready to follow the color variation as per the guide path.



? Now, using the Selection Tool (V) from the toolbox, click and select the second segment of the guide path and choose a different color. Repeat the same for the third segment of the path too.



Run the animation now to see the color influence of the guide path on the object itself in the course of the tween. You can see that the influence is not just on the color, but also on the alpha/opacity value of the stroke segment in the guide path.

Here is an example that uses Animation Guide with color variation:

Using Bone tool animation in Animate CC

About inverse kinematics

Inverse kinematics (IK) is a way of animating objects using bones chained into linear or branched armatures in parent-child relationships. When one bone moves, connected bones move in relation to it.

Inverse kinematics lets you easily create natural motion. To animate using inverse kinematics, you simply specify the start and end positions of bones on the Timeline. Animate automatically interpolates the positions of the bones in the armature between the starting and ending frames.

You can use IK in the following ways:

- By using a shape as a container for multiple bones. For example, you can add bones to a drawing of a snake so that it slithers realistically. You can draw these shapes in Object Drawing mode.
- By chaining symbol instances. For example, you can link movie clips showing a torso, arm, lower arm, and hand so that they move realistically in relation to each other. Each instance has only one bone.

Bone styles

There are 4 ways that Animate can draw bones on the Stage:

- Solid. This is the default style.
- Wired. Useful when the solid style obscures too much of the artwork beneath the bone.
- Line. Useful for smaller armatures.
- None. Hides the bones to show only the artwork beneath them.

To set the Bone Style, select the IK span in the Timeline and then select the style from the Style menu in the Options section of the Properties panel.

Note: If you save a document with the Bone Style set to None, Animate automatically changes bone style to Line the next time you open the document.

Pose layers

When you add bones to symbol instances or shapes, Animate creates a new layer for them in the Timeline. This new layer is called the pose layer. Animate adds the pose layer to the Timeline between existing layers to maintain the previous stacking order of objects on the Stage.

Add bones to symbols

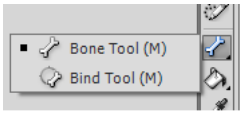
You can add IK bones to movie clip, graphic, and button instances. To use text, convert it to a symbol first. The symbol instances can be on different layers before you add bones. Animate adds them to the pose layer.

Note: You can also break text apart (**Modify > Break Apart**) into separate shapes and use bones with the individual shapes.

As you chain objects, consider the parent-child relationships you want to create, for example, from shoulder to elbow to wrist.

1 Create symbol instances on the Stage. To save time later, arrange the instances so that they approximate spatial configuration you want.

2 Select the Bone tool from the Tools panel.



Bone tool on the toolbar

3 Click the symbol instance that you want to set as the root bone of the armature. Click at the point where you want to attach the bone to the symbol.

By default, Animate creates the bone at the location of mouse click. For a more precise way of adding a bone, turn off Auto Set Transformation Point for IK Bone Tool (**Edit > Preferences > Drawing**). With Auto Set Transformation Point turned off, the bone will snap to the symbol transformation point when you click from one symbol to the next.

4 Drag to another symbol instance and release the mouse button at the point where you want to attach it.

5 To add another bone to the armature, drag from the tail of the first bone to the next symbol instance.

It's easier to place the tail precisely if you turn off Snap To Objects (View > Snapping > Snap To Objects).

6 To create a branched armature, click the head of an existing bone where you want the branch to begin. Then drag to create the first bone of the new branch.

An armature can have as many branches as necessary.

Note: A branch cannot connect to another branch except at its root.

7 To reposition the elements of the completed armature, drag either the bones or the instances themselves.

- Dragging a bone moves its associated instance without allowing it to rotate relative to its bone.
- Dragging an instance allows it to move as well as rotate relative to its bone.
- Dragging an instance in the middle of a branch causes the parent bones to articulate with joint rotation. The child bones move with no joint rotation.

After you create an armature, you can still add new instances from different layers to the armature. Drag a new bone to the new instance and Animate moves the instance to the pose layer of the armature.

Add bones to shapes

You add bones to a single shape or to a group of shapes that are on the same layer. In either case, you must select all the shapes before adding the first bone. After you add bones, Animate converts all the shapes and bones into an IK shape object and moves the object to a new pose layer.

After you have added bones to a shape, the shape has the following limitations:

- You cannot merge an IK shape with other shapes outside it.

- You cannot rotate, scale, or skew the shape with the Free Transform tool.
- Editing the control points of the shape is not recommended.

1 Create a filled shape or shapes on the Stage.

   The shape can contain multiple colors and strokes. Edit the shapes so they are as close to their final form as possible. Once you add bones to a shape, the options for editing the shape become more limited.

   If the shape is too complex, Animate will prompt you to convert it to a movie clip before adding bones.

2 Select the entire shape on the Stage.

   If the shape contains multiple color areas or strokes, drag a selection rectangle around the shape to ensure that the entire shape is selected.

3 Select the Bone tool in the Tools panel.

4 With the Bone tool, click inside the shape and drag to another location within the shape.

5 To add another bone, drag from the tail of the first bone to another location in within the shape.

   The second bone becomes a child of the root bone. Link areas of the shape with bones in the order of the parent-child relationships you want to create. For example, link from shoulder to elbow to wrist.

6 To create a branched armature, click the head of an existing bone where you want the branch to begin. Then drag to create the first bone of the new branch.

   An armature can have as many branches as necessary.

   Note: A branch cannot connect to another branch except at its root.

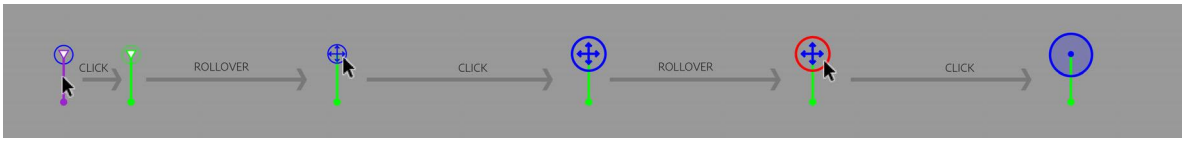
7 To move the armature, select the IK shape object with the Selection tool and then drag any of the bones to move them.

Once the shape becomes an IK shape, it has the following limitations:

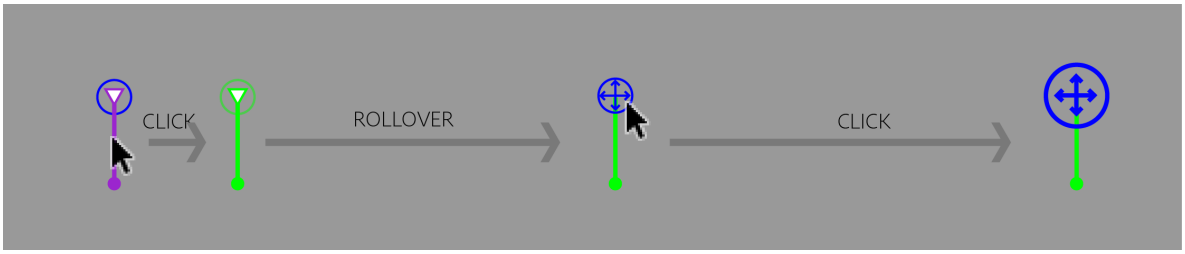
- You can no longer transform (scale or skew) the shape.
- You cannot add new strokes to the shape. You can still add or remove control points from the existing strokes of the shape.
- You cannot edit the shape in place (by double-clicking it on the Stage.)
- The shape has its own registration point, transform point, and bounding box.

On-stage controls

On-stage controls allow you to easily make rotation and translation adjustments on the stage with the help of guides that show the rotation range and precise control. The on-state controls also allow you to continue working on the stage without having to go back to the property inspector to adjust rotation.



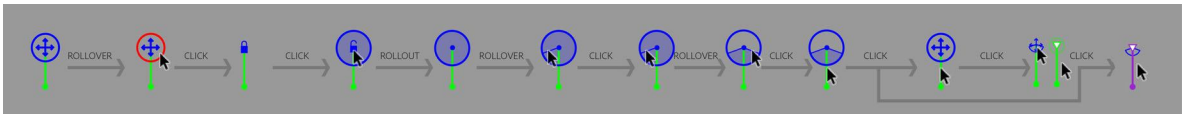
Guide to use on-stage controls



The bone tool on-stage controls described in the image work as follows:

1. To start working with the on-stage controls, select the bone and use the head of the bone.
2. To view the on-stage controls, roll-over the head of the bone. The head turns in to a four-way arrows or a plus symbol (X and Y axis) inside a circle. The arrows represent the translation attributes and the circle represents rotation attributes.
3. Click on the head of the bone and select the circle to edit rotation or select the plus symbol to edit translation attributes.
4. To see the presence of interactive handles for rotation and translatsion at anytime, roll over the head of the bone.
5. When you click on either the rotation or translation option, the on-stage controls to set the constraints are displayed.

Using the rotation controls



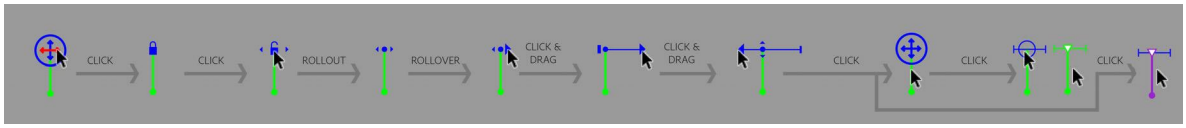
Guide to rotation controls

To work with the rotation controls, do the following:

1. Click the bone head to see the rotation and translation tools.
2. Roll over and click the circle that represents the rotation tool. The circle turns red.
3. Click on the lock icon to enable free rotation. Lock icon turns to a dot.
4. Moving the cursor away from the center shows you one end of the rotation radius. Click on the point on which you want the rotation to start.
5. Move the cursor within the circle again to select the other end of the rotation radius. Click where you want that point to be.
6. Confirm the radius definition by clicking on the circle.

Note: When you edit the rotation that you have already defined, you can increase or decrease the borders by clicking on the line and dragging.

Using the translation controls



Guide to translation controls

You can use the translation controls as follows:

1. Roll over the plus sign with four-way arrows and click on it to select the translation controls.
2. Click on the lock to enable the translation controls. The lock icon turns into a dot.
3. Click on an arrow head and drag it to the point to which you want the extend the range of movement.

Edit IK armatures and objects

You can't edit IK armatures if the pose layer includes poses after the first frame of the Timeline. Before editing, delete any additional poses after the first frame of the armature in the Timeline.

If you are simply repositioning an armature for animation purposes, you can change positions in any frame of the pose layer. Animate converts the frame to a pose frame.

Select bones and associated objects

- To select an individual bone, click the bone with the Selection tool. Shift-click to select multiple bones.
- To move the selection to adjacent bones, click the Parent, Child, or Next/Previous sibling buttons in the Property inspector.
- To select all the bones in the armature, double-click a bone.
- To select an entire armature and display the properties of the armature and its pose layer, click a frame in the pose layer containing the armature.
- To select an IK shape, click the shape.
- To select a symbol instance connected to a bone, click the instance.

Reposition bones and associated objects

- To reposition a linear armature, drag any bone in the armature. If the armature contains connected symbol instances, you can also drag an instance. In this way you can rotate the instance relative to its bone.
- To reposition a branch of an armature, drag any bone in the branch.
- All the bones in the branch move. Bones in other branches of the armature do not move.
- To rotate a bone with its child bones without moving the parent bone, Shift-drag the bone.
- To move an IK shape to a new location on the Stage, select the shape and change its X and Y properties in the Property inspector. You can also Alt-drag (Windows) or Option-drag (Macintosh) the shape.

Delete bones

Do one of the following:

- To delete an individual bone and all of its children, click the bone and press the Delete key.
- You can select multiple bones to delete by Shift-clicking each bone.

- To delete all bones from an IK shape or symbol armature from the Timeline, right-click the IK armature span in the Timeline and choose Remove Armature from the context menu.
- To delete all bones from an IK shape or a symbol armature on the Stage, double click a bone in the armature to select all bones. Then press Delete.IK shapes revert to normal shapes.

Move bones relative to the associated shape or symbol

- To move the location of either end of a bone within an IK shape, drag the end of the bone with the Subselection tool.

Note: The Subselection tool does not work if there are multiple poses in the IK span. Before editing, delete any additional poses after the first frame of the armature in the Timeline.

- To move the location of a bone joint, head, or tail within a symbol instance, move the transformation point of the instance. Use the Free Transform tool. The bone moves with the transformation point.
- To move an individual symbol instance without moving any other linked instances, Alt-drag (Windows) or Command-drag (Macintosh) the instance, or drag with the Free Transform tool. The bones connected to the instance lengthen or shorten to accommodate the new location of the instance.

Edit an IK shape

You can add, delete, and edit control points of the contours in an IK shape using the Subselection tool.

- To move the position of a bone without changing the IK shape, drag the endpoint of a bone.
- To display the control points of the IK shape boundary, click the stroke of the shape.
- To move a control point, drag the control point.
- To add a new control point, click a part of the stroke without any control points.
- To delete an existing control point, click to select it, and then press the Delete key.

Note: An IK shape cannot be transformed (scaled or skewed).

Bind bones to shape points

By default, the control points of a shape are connected to the bone that is nearest to them. You can use the Bind tool to edit the connections between individual bones and the shape control points. In this way you can control how the stroke distorts when each bone moves for better results. This technique is useful when the stroke of a shape does not distort as you want when the armature moves.

You can bind multiple control points to a bone and multiple bones to a control point.

- To highlight the control points connected to a bone, click the bone with the Bind tool.

  The connected points are highlighted in yellow while the selected bone is highlighted in red. Control points connected to only one bone appear as squares. Control points connected to more than one bone appear as triangles.

- To add control points to a selected bone, Shift-click a control point that is not highlighted.

  You can also Shift-drag to select multiple control points to add to the selected bone.

- To remove control points from the bone, Ctrl-click (Windows) or Option-click (Macintosh) a control point that is highlighted in yellow.

  You can also Ctrl-drag (Windows) or Option-drag (Macintosh) to remove multiple control points from the selected bone.

- To highlight the bones connected to a control point, click the control point with the Bind tool.

  The connected bones are highlighted in yellow while the selected control point is highlighted in red.

- To add other bones to the selected control point, Shift-click a bone.
- To remove a bone from a selected control point, Ctrl-click (Windows) or Option-click (Macintosh) a bone that is highlighted in yellow.

Constrain motion of IK bones

To create more realistic motion of IK armatures, you can control the freedom of motion of specific bones. For example, you can constrain two bones of an arm so that the elbow cannot bend in the wrong direction.

By default, each IK bone is assigned a fixed length when the bone is created. Bones can rotate around their parent joint and along the x- and y-axis. However, they cannot move in ways that require the length of their parent bone to change unless you enable x- or y-axis motion. By default, bone rotation is enabled and x- and y-axis motion is disabled.

You can also limit the speed of motion of a bone to create the effect of weight in a bone.

In armatures with strings of connected bones, you cannot contrain the motion of the last joint in any branch of the armature. To give the appearance of contraint of the last joint, use bones with movie clips and connect the last bone to a movie clip that has its alpha property set to zero. Then constrain the next-to-last bone instead of the last one.

Examples:

- For an arm, you could constrain the degrees of rotation of the elbow so that it cannot rotate beyond the normal range of motion of a forearm.
- To enable a character to move across the Stage, turn on X or Y translation on the root bone. Turn off rotation when using X and Y translation for more accurate movement.

You set these properties in the Property inspector when one or more bones are selected.

- To enable a selected bone to move along the x- or y- axis and change the length of its parent bone, select Enable in the Joint: X Translation or Joint: Y Translation section of the Property inspector.

  A two-headed arrow appears perpendicular to the bone on the joint to indicate that x-axis motion is enabled. A two-headed arrow appears parallel to the bone on the joint to indicate that y-axis motion is enabled. Enabling both x and y translation for a bone simplifyies the task of positioning the bone when rotation is disabled for the bone.
- To limit the amount of motion enabled along the x- or y-axis, select Constrain in the Joint: X Translation or Joint: Y Translation section of the Property inspector and enter a value for the minimum and maximum distance the bone can move.
- To disable rotation of the selected bone around the joint, deselect the Enable checkbox in the Joint: Rotation section of the Property inspector.

  This checkbox is selected by default.
- To constrain rotation of a bone, enter minimum and maximum degrees of rotation in the Joint: Rotation section of the Property inspector.

  The degrees of rotation are relative to the parent bone. An arc appears on top of the bone joint indicating the degrees of freedom of rotation.
- To make a selected bone stationary relative to its parent bone, disable rotation and x- and y-axis translation.

  The bone becomes rigid and follows the motion of its parent.
- To limit the speed of motion of a selected bone, enter a value in the Joint Speed field in the Property inspector.

  Joint speed gives the bone the effect of weight. The maximum value of 100% is equivalent to unlimited speed.

Add springness to bones

Two bone properties can be used to add springiness to IK bones. The Strength and Damping properties of bones give real physical movement to IK Bones by integrating dynamic physics into the Bones IK system. These properties allow easier creation of physics-enhanced animation. The Strength and Damping properties give bone animation life-like movement that is highly configurable. It is best to set these properties before adding poses to a pose layer.

Strength: The stiffness of the spring. Higher values create a stiffer spring effect.

Damping: The rate of decay of the spring effect. Higher values cause the springiness to diminish more quickly. A value of 0 causes the springiness to remain at its full strength throughout the frames of the pose layer.

To enable springiness, select one or more bones and set the Strength and Damping values in the Spring section of the Property inspector. The higher the Strength, the more rigid the spring becomes. Damping determines the rate of decay of the spring effect, so the higher the value, the faster the animation ends.

To turn off the Strength and Damping properties, select the pose layer in the Timeline and deselect the Enable checkbox in the Spring section of the Property inspector. This allows you to see on Stage the poses you have defined in the pose layer without the effect of the Spring properties.

The following factors affect the final look of your bones animation when working with the Spring properties. Experiment with adjusting each of these to acheive the final look you want.

- The Strength property value.
- The Damping property value.
- The number of frames between poses in the pose layer.
- The total number of frames in the pose layer.
- The number of frames between the final pose and the last frame of the pose later.

Animate an armature

You animate IK armatures differently from other objects in Animate. With armatures, you simply add frames to the pose layer and reposition the armature on the Stage to create a keyframe. Keyframes in pose layers are called

poses

. Because IK armatures are typically used for animation purposes, each pose layer acts as a tween layer automatically.

However, IK pose layers are different from tween layers because you cannot tween properties other than bone position in the pose layer. To tween other properties of an IK object such as location, transform, color effects, or filters, enclose the armature and its associated objects in a movie clip or graphic symbol. You can then animate the properties of the symbol using the Insert > Motion Tween command and the Motion Editor panel.

You can also animate IK armatures with ActionScript 3.0 at runtime. If you plan to animate an armature with ActionScript, you cannot animate it in the Timeline. The armature can have only one pose in the pose layer. That pose must be in the first frame in which the armature appears in the pose layer.

Hide editing controls during animation

Keeping all the on-stage controls always enabled can result in inadvertantly altering the positioning and the properties of your armature. After creating bones and armature for animation, you can turn off the armature editing controls and hints by selecting the Hide armature editing controls and hints checkbox in the property inspector.

Animate an armature in the Timeline

IK armatures exist on pose layers in the Timeline. To animate armatures in the Timeline, insert poses by right-clicking a frame in a pose layer and selecting Insert Pose. Use the Selection tool to change the configuration of the armature. Animate automatically interpolates the positions of the bones in the frames between poses.

1 *In the Timeline, if needed, add frames to the pose layer of the armature to make room for the animation you want to create.*

   You add frames by right-clicking (Windows) or Option-clicking (Macintosh) a frame in the pose layer to the right of any existing frames and choosing Insert Frame. You can add or delete frames later at any time.

2 *To add a pose to a frame in the pose layer, do one of the following:*

   - Place the playhead in the frame where you want to add the pose and then reposition the armature on the Stage.
   - Right-click (Windows) or Option-click (Macintosh) the frame in the pose layer and choose Insert Pose.
   - Place the playhead in the frame where you want to add the pose and then press the F6 key.

   Animate inserts a pose into the pose layer in the current frame. A diamond-shaped pose marker in the frame indicates the new pose.

3 *Add additional poses in separate frames to complete the animation to your satisfaction.*

4 *To change the length of the animation in the Timeline, hover the mouse cursor over the last frame of the armature until the Resize cursor appears. Then drag the last frame of the pose layer to the right or left to add or remove frames.*

   Animate repositions the pose frames in proportion to the change in duration of the layer and reinterpolates the frames in between. To resize the armature span in the Timeline without affecting the location of the pose frames, Shift-drag the last frame of the armature span.

When you finish, scrub the playhead in the Timeline to preview the animation. You can see the armature positions interpolated in between the pose frames.

You can reposition the armature in the pose frames or add new pose frames at any time.

Edit the location of poses in an armature

You can edit the location of poses in the following ways:

- To move a pose to a new location, Ctrl-click (Windows) or Command-click (Macintosh) a pose and then drag the pose to a new location in the armature.
- To copy a pose to a new location, Ctrl-click (Windows) or Command-click (Macintosh) a pose and then Alt-drag (Windows) or Option-drag (Macintosh) the pose to a new location in the armature.
- Cut, copy and paste. Ctrl-click (Windows) or Command-click (Macintosh) the pose you want to cut or copy and choose Cut Pose or Copy Pose from the context menu.

  Then Ctrl-Click (Windows) or Command-click (Macintosh) the frame in the armature span where you want to paste and choose Paste Pose from the context menu.

Apply additional tweened effects to IK object properties

To apply tweened effects to IK object properties other than bone position, enclose the object in a movie clip or graphic symbol.

1 *Select the IK armature and all of its associated objects.*

For an IK shape you can simply click the shape. For linked sets of symbol instances, you can click the pose layer in the Timeline or drag a selection marquee around all of the linked symbols on the Stage.

2 *Right-click (Windows) or Ctrl-click (Macintosh) the selection and choose Convert To Symbol from the context menu.*

3 *In the Convert To Symbol dialog box, enter a name for the symbol and choose either Movie Clip or Graphic from the Type menu. Click OK.*

Animate creates a symbol with its own timeline containing the pose layer for the armature.

4 *To use the new symbol on the main timeline of your FLA file, drag the symbol from the Library to the Stage.*

You can now add motion tween effects to the new symbol instance on the Stage.

You can nest symbols containing IK armatures within as many layers of other nested symbols as necessary to create your desired effect.

Prepare an armature for runtime animation with ActionScript 3.0

You can use ActionScript 3.0 to control IK armatures connected to shapes or movie clip instances. However, you can't control armatures connected to graphic or button symbol instances with ActionScript.

Only armatures with a single pose can be controlled with ActionScript. Armatures with more than one pose can only be controlled in the Timeline.

1 *With the Selection tool, select a frame in a pose layer containing an armature.*

2 *In the Property inspector, choose Runtime from the Type menu.*

The hierarchy can now be manipulated with ActionScript 3.0 at runtime.

By default, the armature name in the Property inspector is the same as the pose layer name. Use this name to refer to the armature in ActionScript. You can change the name in the Property inspector.

Add easing to IK animation

Easing is adjusting the animation speed in the frames around each pose to create more realistic motion.

1 Select either a frame between two pose frames in the pose layer or a pose frame.

- **Intervening frame**: Ease affects the frames between the pose frames to the left and right of the selected frame.
- **Pose frame**: Ease affects the frames between the selected pose and the next pose in the layer.

2 In the Property inspector, select a type of ease from the Ease menu.

- **Simple eases**: Four eases that slow the motion in the frames either immediately after or before the selected frame.
- **Start and Stop eases**: Slow the motion in the frames immediately after the prior pose frame and the frames immediately before the next pose frame.

Note: These same ease types are available in the Motion Editor when you use motion tweens. You can view the curve of each type of ease in the Motion Editor when you select a motion tween in the Timeline.

3 In the Property inspector, enter a value for the Strength of the ease.

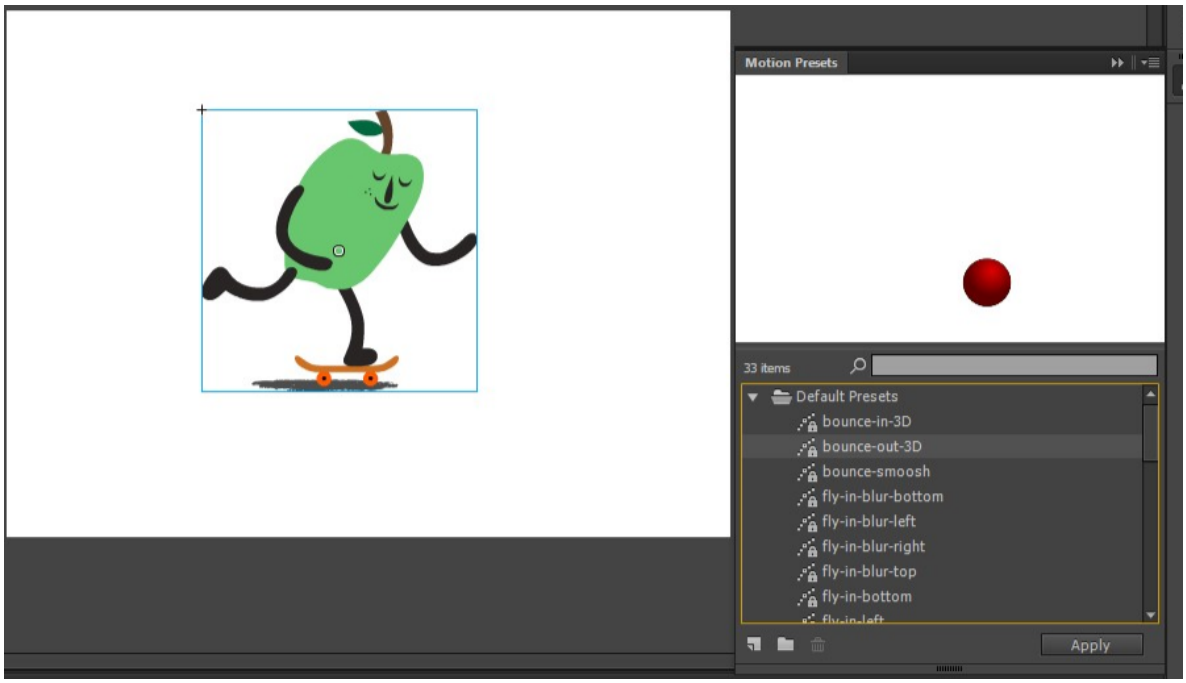
The default Strength is 0, which is equivalent to no easing. The maximum value is 100, which applies the most significant easing effect to the frames preceding the pose frame. The minimum value is -100, which applies the most significant easing effect to the frames immediately after the preceding pose frame. When you finish, preview the eased motion on the Stage. Scrub the playhead in the Timeline between the two pose frames where you applied the ease.

Creating and applying Motion presets

Motion Presets are pre-configured motion tweens that you can apply to an object on the Stage. You can create and save your own custom presets. You can use existing Motion Presets that you have modified, or custom tweens that you have created on your own.

Using presets can save significant production time during design and development of your projects, especially if you use similar kinds of tweens often.

The Motion Presets panel also allows you to import and export presets. You can share presets with people you are collaborating with or take advantage of presets shared by members of the Animate design community.



Motion Presets

Note:

Motion Presets can only contain motion tweens. Classic tweens cannot be saved as Motion Presets.

See also

About motion tween

Creating a Motion tween animation

Animate position with a tween

Editing the motion path of a tween animation

Using property keyframes

Applying a Motion Preset

To apply a Motion Preset:

1 Select a tweenable object on the Stage. If you apply a Motion Preset to an object that is not tweenable, Animate provides you options to convert the object to a symbol.

2 Select a preset in the Motion Presets panel.

? Click the Apply button in the panel or choose Apply at Current Location from the panel menu.

The motion is applied so that the motion starts at the current position of the movie clip on theStage. If the preset has a motion path associated with it, the motion path appears on the Stage.

To apply the preset, Shift-click the Apply button or select End at Current Location from the panel menu.

You can also apply a Motion Preset to multiple selected frames on separate layers, as long as each selected frame contains only a single tweenable object.

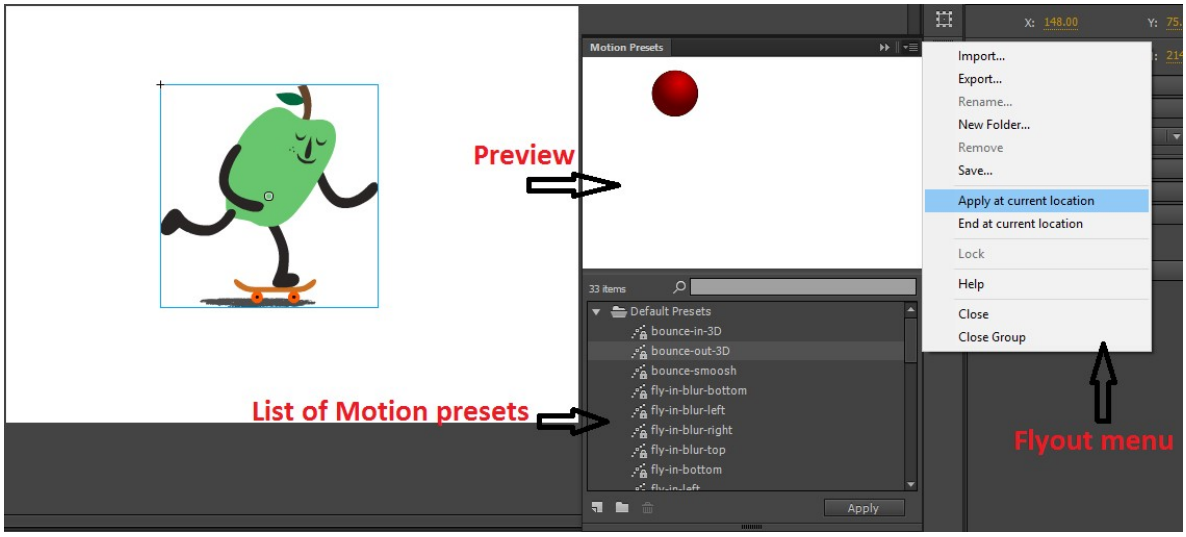
Previewing a Motion Preset

Each Motion Preset included with Animate has a preview that you can watch in the Motion Presets panel. The preview gives you a sense of what the animation looks like when applied to an object in your document. Add your own preview for custom presets you create or import.

1 Open the Motion Presets panel.

2 Select a Motion Preset from the list. The preview plays in the Preview pane at the top of the panel.

? To stop the preview from playing, click outside the Motion Presets panel.



Creating Motion Presets

While a tweenable object (symbol instance or text field) is selected on the Stage, you can click the Apply button to apply a preset. You can apply only one preset per object. If you apply the second preset to the same object, the second preset replaces with the first one.

Once a preset is applied to an object on the Stage, the tween created in the Timeline is not related to the Motion Presets panel. Deleting or renaming a preset in the Motion Presets panel has no effect on any tweens previously created with that preset. If you save a new preset over an existing one, it has no effect on any pre-existing tweens created with the original preset.

Each Motion Preset contains a specific number of frames. When you apply a preset, the tween span created in the Timeline contains this number of frames. If the target object has a tween of a different length applied to it, the tween span adjusts to match the length of the Motion Preset. You can adjust the length of the tween span in the Timeline after the preset is applied.

Motion Presets that contain 3D motion can only be applied to movie clip instances. The tweened 3D properties do not apply to graphic or button symbols, or to classic text fields. You can apply 2D or 3D Motion Presets to any 2D or 3D movie clip.

Saving a tween as a custom Motion Preset

If you create or modify a tweened preset, you can save it as a new Motion Preset. The new preset appears in the Custom Presets folder in the Motion Presets panel.

To save a custom tween as a preset:

1. Select one of the following items:
   - The tween span in the Timeline
   - The object on Stage to which the custom tween was applied
   - The motion path on the Stage
2. Click the Save Selection As Preset button in Motion Presets panel or choose Save as Motion Preset from the context menu of the selection.

   The new preset appears in the Motion Presets panel. Animate saves the preset as an XML file. The files are stored in the following directories:

   - Windows: <hard disk>\Documents and Settings\<user>\Local Settings\Application Data\Adobe\Animate CC\<language>\Configuration\Motion Presets\
   - Macintosh: <hard disk>/Users/<user>/Library/Application Support/Adobe/Animate CC/<language>/Configuration/Motion Presets/

   Note:

   You cannot undo saving, deleting, or renaming custom presets.

Importing a Motion Preset

Motion Presets are stored as XML files. Import an XML tween file to add it to the Motion Presets panel.

Note: Motion Presets imported as XML files can only be added to motion tweens.

1. Choose Import from the Motion Presets panel menu.
2. In the Open dialog box, navigate to the XML file you want to import and click Open.

Exporting a Motion Preset

You can export Motion Presets as XML files that can be shared with other Animate users.

1. Select the preset in the Motion Presets panel.
2. Choose Export from the panel menu.
3. In the Save As dialog box, choose a name and location for the XML file and click Save.

Deleting a Motion Preset

You can remove presets from the Motion Presets panel. When you remove a preset, Animate deletes its XML file from disk. Back up any presets you want to use again later by exporting their copies.

1 Select the preset to delete in the Motion Presets panel.

2 Do one of the following:

- Choose Remove from the panel menu.
- Click the Remove item button in the panel.

Creating a preview for a custom preset

To preview any custom Motion Presets, store a SWF file that demonstrates the tweened animation in the same directory as the Motion Preset XML file.

1 Create the tweened animation and save it as a custom preset.

2 Create a FLA file that contains only a demonstration of the tween. Save the FLA with the exact same name as the custom preset.

3 Create a SWF file from the FLA file with the **Publish** command.

4 Place the SWF file in the same directory as the saved custom Motion Preset XML file. These files are stored in the following directories:

- Windows: <hard disk>\<users>\Application Data\Local\Adobe\Animate CC\<language>\Configuration\Motion Presets\
- Macintosh: <hard disk>/Users/<user>/Library/Application Support/Adobe/Animate CC/<language>/Configuration/Motion Presets/

The preview now displays when the custom tween is selected in the **Motion Presets** panel.

How to create buttons with Animate CC

Basic steps for creating buttons

1 **Decide what button type best suits your needs.**

Button symbol Most people choose button symbols for their flexibility. Button symbols contain a specialized internal timeline for button states. You can easily create visually different **Up**, **Down**, and **Over** states. Button symbols also change their state automatically as they react to user actions.

Movie clip button You can use a movie clip symbol to create sophisticated button effects. Movie clip symbols can contain almost any type of content, including animation. However, movie clip symbols do not have built-in **Up**, **Down**, and **Over** states. You create those states yourself, using ActionScript. A disadvantage is that movie clip files are larger than button files.

ActionScript button component Use a button component if you require only a standard button or a toggle, and you don't want to customize it extensively. Both ActionScript 2.0 and 3.0 button components come with built-in code

that enables state changes. So, you don't have to define the look and behavior of button states. Simply drag the component onto the **Stage**.

- **ActionScript 3.0 button components** allow for some customization. You can bind the button to other components, and share and display application data. They have built-in features, such as accessibility support. **Button**, **RadioButton**, and **CheckBox** components are available.
- **ActionScript 2.0 button components** are not customizable. The component enables state changes.

2 Define your button states.

Up frame The appearance of the button when the user is not interacting with it.

Over frame The appearance of the button as the user is about to select it.

Down frame The appearance of the button as the user selects it.

Hit frame The area that is responsive to clicks by the user. Defining this **Hit** frame is optional. If your button is small, or if its graphic area is not contiguous, defining this frame can be useful.

- The contents of the **Hit** frame are not visible on the **Stage** during playback.
- The graphic for the **Hit** frame is a solid area large enough to encompass all graphic elements of the **Up**, **Down**, and **Over** frames.
- If you don't specify a **Hit** frame, the image for the **Up** state is used.

  You can make a button that responds when a different area of the stage is clicked or rolled over (also called a disjoint rollover). Place the **Hit** frame graphic in a different location than the other button frame graphics.

3 Associate an action with the button.

To make something happen when the user selects a button, you add ActionScript code to the Timeline. Place the ActionScript code in the same frames as the buttons. The **Code Snippets** panel has pre-written ActionScript 3.0 code for many common button uses. See Add interactivity with code snippets.

Note:

ActionScript 2.0 is not compatible with ActionScript 3.0. If your version of Animate uses ActionScript 3.0, you can't paste ActionScript 2.0 code into your button (and vice versa). Before you paste ActionScript from another source into your buttons, verify that the version is compatible.

Create a button with a button symbol

To make a button interactive, you place an instance of the button symbol on the **Stage** and assign actions to the instance. You assign the actions to the root timeline of the FLA file. Do not add actions to the timeline of the button symbol. To add actions to the button timeline, use a movie clip button instead.

1. Choose **Edit** > **Deselect All**, or click an empty area of the **Stage** to ensure that nothing is selected on the **Stage**.
2. Choose **Insert** > **New Symbol**.
3. In the **Create New Symbol** dialog box, enter a name. For the symbol **Type**, select **Button**.

   Animate switches to symbol-editing mode. The **Timeline** changes to display four consecutive frames labeled **Up**, **Over**, **Down**, and **Hit**. The first frame, **Up**, is a blank keyframe.
4. To create the Up state button image, select the **Up** frame in the **Timeline**. Then use the drawing tools, import a graphic, or place an instance of another symbol on the **Stage**.

   You can use graphic symbols or movie clip symbols inside a button, but you cannot use another button symbol.
5. In the **Timeline**, click the **Over** frame, and then choose **Insert** > **Timeline** > **Keyframe**.

Animate inserts a keyframe that duplicates the contents of the preceding Up frame.

6 With the **Over** frame still selected, change or edit the button image on the **Stage** to create the appearance you want for the **Over** state.

7 Repeat steps 5 and 6 for the **Down** frame and the optional **Hit** frame.

8 To assign a sound to a state of the button, select that state's frame in the **Timeline** and choose **Window** > **Properties**. Then select a sound from the **Sound** menu in the **Property** inspector. Only sounds you have already imported appear in the **Sound** menu.

9 When you finish, choose **Edit** > **Edit Document**. Animate returns you to the main timeline of your FLA file. To create an instance of the button you created on the **Stage**, drag the button symbol from the **Library** panel to the **Stage**.

10 To test a button's functionality, use the **Control** > **Test command**. You can also preview the states of a button symbol on the **Stage** by choosing **Control** > **Enable Simple Buttons**. This command allows you to see the up, over, and down states of a button symbol without using **Control** > **Test**.

Enable, edit, and test button symbols

By default, Animate keeps button symbols disabled as you create them. Select and then enable a button to see it respond to mouse events. Best practice is to disable buttons as you work and enable them to quickly test their behavior.

- To select a button, use the **Selection** tool to drag a selection rectangle around the button.
- To enable or disable buttons on the **Stage**, choose **Control** > **Enable Simple buttons**. This command acts as a toggle between the two states.
- To move a button, use the arrow keys.
- To edit a button, use the **Property** inspector. If it isn't visible, choose **Windows** > **Properties**.
- To test the button in the authoring environment, choose **Control** > **Enable Simple Buttons**.
- To test the button in Flash Player, choose **Control** > **Test Movie** [or **Test Scene**] > **Test**. This method is the only way to test movie clip buttons.
- To test the button in the **Library Preview** panel, select the button in the **Library** and click **Play**.

Troubleshooting buttons

Use these resources to troubleshoot common problems with buttons:

- TechNote: Adding actions to shared buttons (Adobe.com)

Additional button resources

The following TechNotes contain instructions for some specific button scenarios:

- TechNote: How to create a new button (Adobe.com)
- TechNote: Creating advanced buttons (Adobe.com)
- TechNote: How can one button do different things at different times? (Adobe.com)

Creating a Motion tween animation

Before you begin

Before you begin animation, understand the following concepts:

Prerequisites	Description
Using property keyframes	Before working with motion tweens, understand use of the Timeline and editing properties. You can edit individual property keyframes on Stage, in the Property inspector, or using the redesigned Motion Editor.
Creating a Motion tween animation	Animate tweens only symbol instances and text fields. All other object types are wrapped in a symbol when you apply a tween to them. The symbol instance can contain nested symbols, which can themselves be tweened on their own timelines.
Creating a Motion tween animation	The minimal building block in a tween layer is a tween span. A tween span in a tween layer can contain only one symbol instance or text field. The symbol instance is called the target of the tween span. However, a single symbol can contain many objects.
Editing the motion path of a tween animation	Adding a second symbol or text field to the tween span replaces the original symbol in the tween. Use any of the following methods to change the target object of a tween: • Drag a different symbol from the library onto the tween span in the Timeline • Use the **Modify** > **Symbol** > **Swap Symbol** command. You can delete the symbol from a tween layer without removing or breaking the tween. You can then add a different symbol instance to the tween later. You can also change the type of the target symbol or edit the symbol at any time.
Editing the motion path of a tween animation	When a tween contains motion, a motion path appears on the Stage. The motion path shows the position of the tweened object in each frame. You can edit the motion path on the Stage by dragging its control points. You cannot add a motion guide to a tween/inverse kinematics layer.

See also

Animating position with a tween

Editing the motion path

Using property keyframes

Components of motion tweens

:

- Is a sequence of frames in the Timeline in which an object has one or more properties changed over time.
- Motion tween span appears in the Timeline as a group of frames in a single layer with a background color.

- You can select the tween spans as a single object and drag them from one location in the Timeline to another, including to another layer.
- You can animate only one object on the Stage in each tween span. This object is called the target object of the tween span.

Property keyframe:

- Is a frame within a tween span where you explicitly define one or more property values for the tween target object.
- These properties could include position, alpha (transparency), color tint, and so on.
- Each defined property has its own property keyframes.
- If you set more than one property in a single frame, then the property keyframes for each of those properties reside in that frame.
- Use Motion Editor to view each property of a tween span and its property keyframes.
- To choose which type of property keyframes to display in the Timeline from the tween span context menu, right-click any property keyframe and select View keyframes.

Target object of a tween

A motion tween has a single object in a tween span called the tween's target object. There are several advantages to having a single target object in a tween:

- You can save a tween as a preset for reuse.
- You can easily move the motion tweens on the Timeline (drag the tween span around) or on the Stage.
- To apply a new instance to an existing tween:
  - Paste it onto a tween to swap it out
  - Drag a new instance from the Library
  - Use the Swap Symbol.

Tweenable objects and properties

The types of objects on which you can apply a motion tween are movie clips, graphics and button symbols, and text fields. The properties of these objects that can be tweened includes:

- 2D X and Y position
- 3D Z position (movie clips only)
- 2D rotation (around the z-axis)
- 3D X, Y, and Z rotation (movie clips only): set the FLA file target as ActionScript 3.0 and Flash Player 10 or higher in the publish settings. Adobe AIR also supports 3D motion.
- Skew X and Y
- Scale X and Y
- Color effects: includes alpha (transparency), brightness, tint, and advanced color settings. Color effects can be tweened only on symbols and TLF text. By tweening these properties, you can make objects appear to fade in or fade from one color to another. To tween a color effect on classic text, convert the text to a symbol.
- **Filter** properties (filters cannot be applied to graphic symbols)

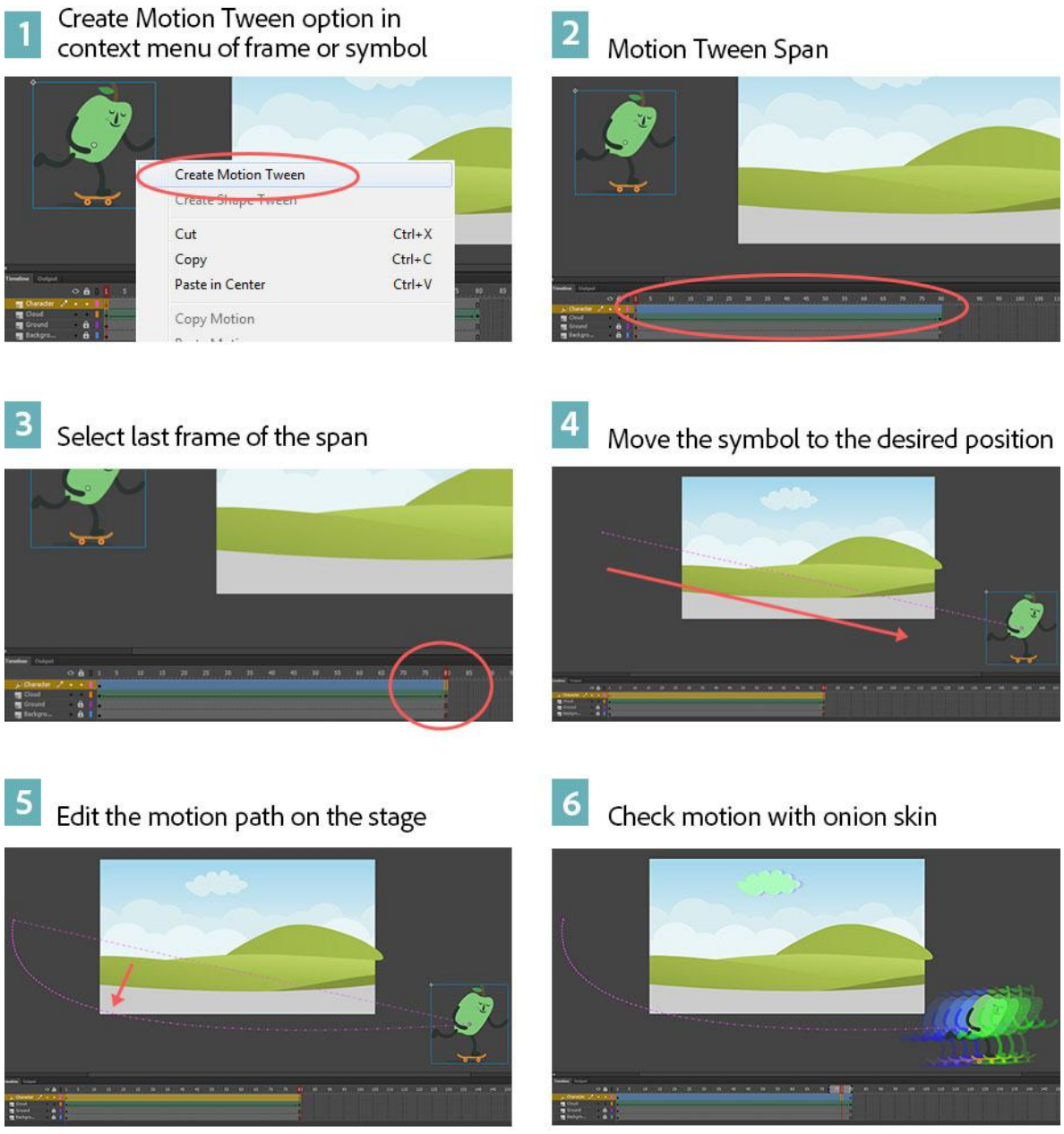
Creating a motion tween animation

You can create a motion tween using one of the following three methods:

- Create a graphic or instance that you want to tween, and then right-click a frame and select **Create Motion Tween**.
- Select the graphic or instance that you want to tween, and select **Insert > Motion Tween** from the main menu.
- Create a graphic or instance that you want to tween, and then right-click the instance on the **Stage** and select **Create Motion Tween**.

Note:

Usage of ActionScript in animation is optional.



Creating a Motion tween Animation

Tweening other properties with the Property inspector

Use the **Create Motion Tween** command to animate properties of a symbol instance or text field. The properties range from rotation, scale, transparency, or tint (symbols and TLF text only). For example, you can edit the alpha (transparency) property of a symbol instance to make it fade onto the screen. For a list of the properties you can animate with motion tweens, see Tweenable objects and properties.

1 Select a symbol instance or text field on the **Stage**.

If the selection contains other objects, or it contains multiple objects from the layer, Animate offers to convert it to a movie clip symbol.

2 Choose **Insert** > **Motion Tween**.

If the "**Convert selection to symbol for tween**" dialog box appears, click OK to convert the selection into a movie clip symbol.

When you apply a tween to an object that exists only in a single keyframe, the playhead moves to the last frame of the new tween. Otherwise the playhead does not move.

3 Place the playhead in the frame of the tween span where you want to specify a property value.

You can place the playhead in any other frame of the tween span. The tween starts with the property values in the first frame of the tween span, which is always a property keyframe.

4 With the object selected on the **Stage**, set a value for a non-position property, such as alpha (transparency), rotation, or skew. Set the value with the **Property inspector** or with one of the tools in the **Tools** panel.

The current frame of the span becomes a property keyframe.

*You can display different types of property keyframes in tween spans. Right-click (Windows) or Ctrl-click (Macintosh) a tween span and choose **View Keyframes** > property type from the context menu.*

5 Scrub the playhead in the **Timeline** to preview the tween on the **Stage**.

6 To add more property keyframes, move the playhead to the desired frame in the span and set a value for the property in the **Property inspector**.

Adding a tween to an existing tween layer

You can add more tweens to an existing tween layer. Add more tweens to use fewer layers when creating Animate content with animation.

? Do one of the following:

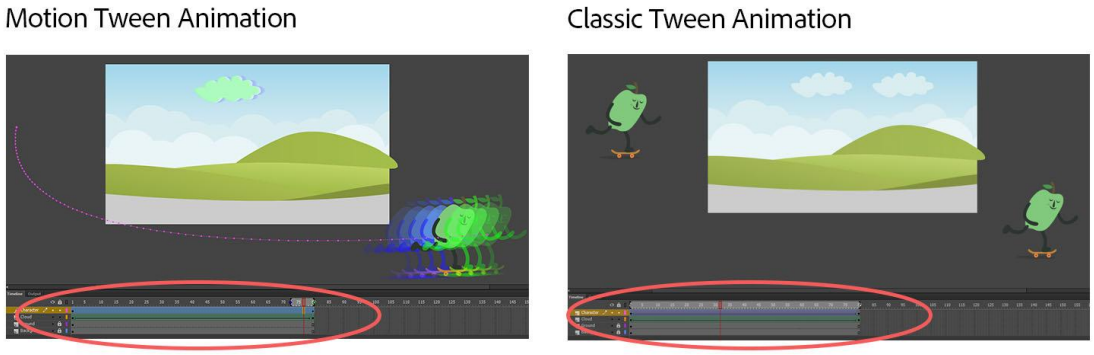
- Add a blank keyframe to the layer (**Insert** > **Timeline** > **Blank Keyframe**), add items to the keyframe, and then tween the items.
- Create a tween on a separate layer and then drag the span to the desired layer.
- Drag a static frame from another layer to the tween layer and then add a tween to an object in the static frame.
- Alt-drag (Windows) or Option-drag (Macintosh) to duplicate an existing span from the same layer or a different layer.
- Copy and paste a tween span from the same or different layer.

Motion tweens vs Classic tweens

Animate CC creates two types of tweened animation: motion tweens and classic tweens.

Motion tween is a type of animation that uses symbols to create movement, size and rotation changes, fades, and color effects.

Classic tween refers to tweening in Flash CS3 and earlier, and is maintained in Animate primarily for transition purposes.



Motion tween and Classic tween animations

Motion tweens versus classic tweens

Motion tweens	Classic tweens
Powerful and simple to create, provides maximum control over tweened animation	Complex to create, classic tween includes all tweens created in earlier versions of Animate.
Offers better tween control.	Provides user-specific capabilities.
Uses keyframes.	Uses property frames.
Consists of one target object over the entire tween.	Tweens between two keyframes with same or different symbols.
Uses text as a tweenable type and does not convert text objects to movie clips.	Converts text objects to graphic symbols.
Does not use frame scripts.	Uses frame scripts.
Stretches and resizes the tween in the timeline and treats it as a single object.	Consists of groups of individually selectable frames in the timeline.
Applies eases across the entire length of a motion tween span. Easing specific frames of a motion tween requires creating a custom ease curve.	Applies eases to the groups of frames between the keyframes within the tween.
Applies one color effect per tween.	Applies two different color effects, such as tint and alpha transparency.
Animates 3D objects.	Cannot animate 3D objects.
Can be saved as motion presets.	Cannot be saved as motion presets. Swaps symbols or sets the frame number of a graphic symbol to display in a property keyframe.

Similarities between motion and classic tweens

- There can be more than one classic or motion tween on the same layer, but you cannot have both types of tween on the same layer.
- Both tweens tween only specific types of objects.

How to edit motion tweens using Motion Editor

The Motion Editor in Animate CC helps you create complex Motion Tweens with minimal effort. The Motion Editor presents a compact view of all Properties applied to a selected tween span as two-dimensional graphs. You can choose to modify each of these graphs, and hence their corresponding tweened properties individually. With precise control and high granularity, you can greatly enrich your animations to emulate real-world behavior using the Motion Editor.

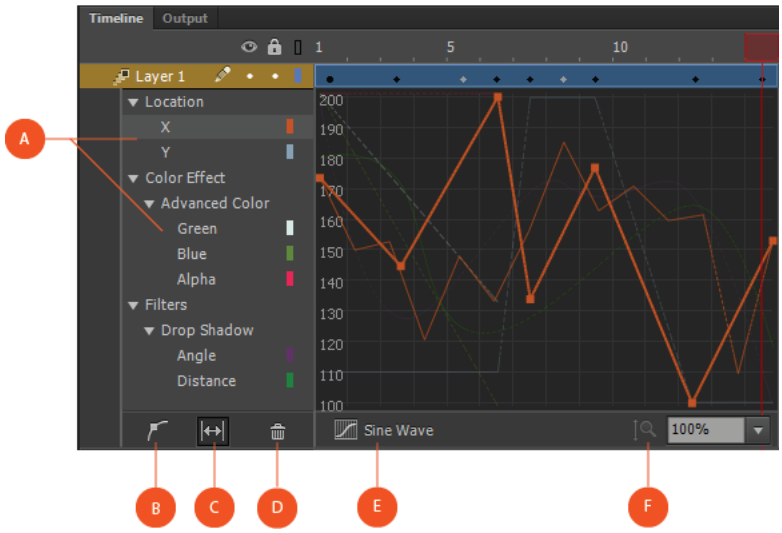
About Motion Editor

The Motion Editor is desgined to make it easy for you to create complex tweens. Motion Editor lets you control and manipulate properties of a tween. After creating a Motion tween, you can take advantage of the Motion Editor to precisely refine your tween. The Motion Editor facilitates focused editing of the tween by allowing you to select and modify one property at a time.

Why use the Motion Editor?

The Motion Editor is designed to make it easy for you to create complex tweens. Hence, the Motion Editor offers granular control over tween and its properties. The following can only be achieved using the Motion Editor:

- **Easy access and modification** of all Properties applied to a tween within a single panel.
- **Add different ease presets or custom ease**: The Motion Editor lets you add different presets, add multiple presets, or create a Custom ease. Adding Ease to a tweened property is an easy way to emulate real world behavior of objects.
- **Resultant curve**: You can apply eases to individual properties, and see the effects of eases on individual property graphs using the Resultant curve. A resultant curve is a representation of the actual tween.
- **Anchor Points and Control Points**: You can isolate and make edits to key sections of a tween using Anchor Points and Control Points.
- **Refined Animations**: The Motion Editor is the only way to make certain kinds of animations, such as creating a curved path tween on an individual property by adjusting its Property curve.



(A) Properties applied to the tween (B) Add Anchor Point button (C) Fit-to-view toggle (D) Remove Property button (E) Add Ease (F) Vertical Zoom toggle

Opening the Motion Editor panel

In this article, it is assumed that you have already created a Motion Tween, and are using the Motion Editor to refine your tween. For information on creating a Motion Tween, see Motion Tween Animation.

To open the Motion Editor, do the following:

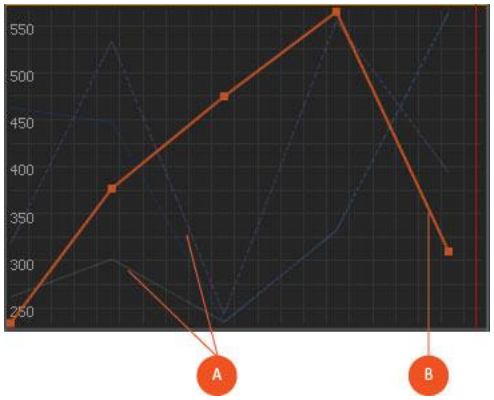
? On the Timeline, select the motion tween span you want to refine, and **double-click** the tween span. You could also **right-click** on the tween span and select **Refine Tween** to bring up the Motion Editor.

Property Curves

The Motion Editor represents Properties of a tween using two-dimensional graphs called Property Curves. These graphs are composited within a grid on the Motion Editor. Each property has its own Property Curve plotted against **time** on the horizontal axis (from left to right), and the **change to the value of a property** on vertical axis.

You can manipulate Motion Tweens by editing Property Curves within Motion Editor. To its end, the Motion Editor facilitates smooth editing of Property Curves, there by allowing you to gain precise control over the tween. You can manipulate a Property Curve by adding property Keyframes or Anchor Points. This allows you to manipulate key parts of the Property Curve, where you want the tween to display transitions for a said Property.

Take note that the Motion Editor allows you to edit only such properties that can be altered during a tween span. For example, the Quality property of the Gradient Bevel filter can only be assigned one value during a tween span, and hence, cannot be edited using the Motion Editor.



(A) Property Curves overlaid on top of each other. (B) Property Curve in focus for the currently selected Property.

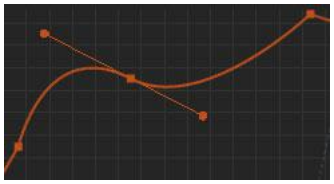
Anchor Points

Anchor Points provide greater control over Property Curves, by allowing you to explicity modify key parts of a curve. You can precisely control the shape of most curves in the Motion Editor by adding property keyframes or anchor points.

The Anchor Points appear as squares on the grid. Using the Motion Editor you can control the behavior of the tween by adding Anchor Points to a Property Curve or modifying their positions. On adding an Anchor Point, a **corner** is created, where in the Curve passes through angles. However, you can smoothen any segment of a Property Curve using Bezier controls for Control Points.

Control Points

Control Points allow you to smoothen or modify a Property Curve on either sides of an Anchor Point. Control Points can be modified using standard Bezier Controls.



Editing Property Curves

To edit the Properties of a tween, do the following:

1. In Animate CC, with a tween span selected, **Right-click** > select **Refine Tween** to bring up the Motion Editor (or simply, double-click the selected tween span).
2. Scroll down and select the Property you want to edit. To invert selection, right-click and select Invert Selection.

3 With the Property Curve for the selected Property in view, you can choose to do the following:
   1 Add Anchor Point by clicking the button and clicking a desired frame on the Property Curve to add an Anchor Point. Or double-click the curve to add an anchor point.
   2 Select and move an existing Anchor Point (in any direction) to a desired frame on the grid. The vertical limit of the movement is restricted to the value range of the Property.
   3 Remove an Anchor Point by selecting and pressing Ctrl + Click (Cmd + Click on MAC).

Editing Property Curves using Control Points

To edit Property Curves using Control Points, do the following:

1 In Animate CC, with a tween span selected, **Right-click** > select **Refine Tween** to bring up the Motion Editor (or double-click the selected tween span).
2 Scroll down and select the Property you want to edit. To invert selection, right-click and select Invert Selection.
3 With the Property Curve for the selected Property in view, you can choose to do the following:
   1 Add Anchor Point by clicking the button and clicking a desired frame within the grid to add an Anchor Point. Or double-click the curve to add an anchor point. OR
   2 Select an existing Anchor Point on the grid.
3 With the Anchor Point selected, Alt+Drag vertically to enable Control Points. You can modify the shape of the curve to smoothen corner segments using bezier controls.

Copying Property Curves

You can also copy Property Curves across Properties within the Motion Editor.

To copy a Property Curve, do the following:

1 In Animate CC, with a tween span selected, **Right-click** > select **Refine Tween** to bring up the Motion Editor (or double-click the selected tween span).
2 Select the Property whose curve you want to copy, and **right-click** > **Copy** OR press Ctrl + C (Cmd + C on MAC).
3 To paste the curve with absolute values, select the Property you want to paste the copied property curve on, and **right-click** > **Paste** or press Ctrl + V (Cmd + V on MAC).
4 To paste the curve within the target curve's range, select the Property you want to paste the copied property curve on, and **right click > Paste to fit current range**.

Reversing a Property Curve

To reverse a Property Curve, do the following:

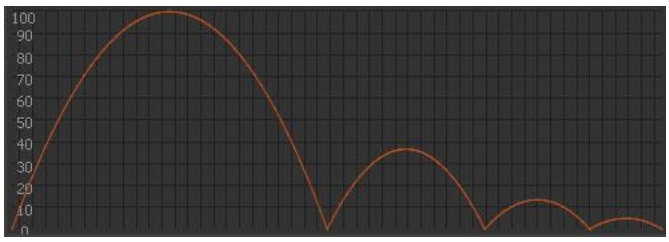
1 In the Motion Editor, select a Property.
2 **Right-click** > **Reverse** to reverse the Property Curve.

Applying preset and custom Eases

Easing allows you to control the speed of a tween to produce realistic motion with pleasing effects. Applying Eases on motion tweens allows you to manipulate the beginning and the end parts of an animation to cause a more natural movement of the object. For example, one of the many common uses of easing is to add realistic acceleration and deceleration at the ends of the motion path of an object. In a nut shell, Animate CC makes alters to the rate of change of the value of Property depending on the Ease applied to it.

An ease can be simple or complex. Animate includes a wide range of preset eases that you can apply for simple or complex effects. You can also assign Strength to an Ease to enhance the visual effect of a tween. In the Motion Editor, you can also create your own custom ease curves.

Since ease curves in the Motion Editor can be complex, you can use them to create complex motion on the Stage without creating complex motion paths on the Stage. You can also use ease curves to create complex tweens of any other properties in addition to the spatial properties such as Location X and Y.

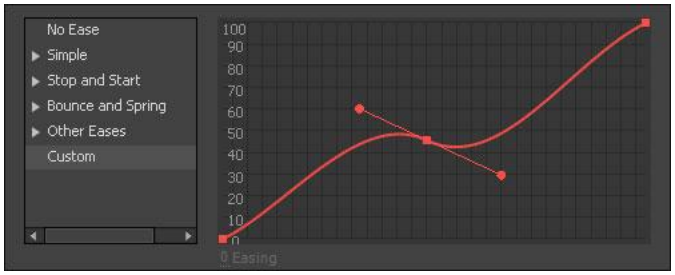


Curve plotted for the Bounce Preset Ease

Custom Eases

Custom easing lets you create your own ease using the Custom Ease curve in the Motion Editor. You can then apply the custom ease to any property of a selected tween.

The Custom ease graph represents the degree of motion over time. Frames are represented by the horizontal axis, and the tween's percentage of change is represented by the vertical axis. The first value in the animation is at 0%, and the last keyframe can be set from 0 through 100%. The rate of change of the tweened instance is shown by the slope of the graph's curve. If you create a horizontal line (no slope) on the graph, the velocity is zero; if you create a vertical line on the graph, there is an instantaneous rate of change.



Applying Ease curve to a Property Curve

To add Ease to a tweened Property, do the following:

1. In the Motion Editor, select the Property you want to apply Ease for, and click the **Add Ease** button to display the Ease panel.
2. On the Ease panel, you can choose to:
    1. Apply a Preset Ease by selecting a preset from the left pane. Specify Ease strength by entering a value in the Easing field.
    2. Create a custom ease by selecting Custom Ease on the left pane and modifying the Ease curve. For more information, see Creating and Applying Custom Ease curves.
3. Click anywhere outside of the Ease panel to close it. Notice that the Add Ease button reads the name of the Ease you applied to the Property.

Creating and applying custom Ease curves

To create and apply Custom Ease to a tweened Property, do the following:

1. In the Motion Editor, select the Property you want to apply Custom Ease for, and click the Add Ease button to display the Ease panel.
2. On the Ease panel, you can modify the default Custom Ease curve by:
    1. Pressing Alt + Click to add Anchor Points on the curve. Further, you can move these points to any desired point on the grid.
    2. Enabling Control Points (alt+click on an Anchor Point) on an Anchor point to smoothen curve segments on either sides of an Anchor Point.
3. Click outside the Ease panel to close it. Notice that the Add Ease button reads Custom, indicating that you applied a Custom Ease to the Property.

Copying Ease Curves

To copy an Ease Curve, do the following:

1. On the Ease panel, select an Ease curve you want to copy, and press Ctrl + C (Cmd + C on MAC).
2. Select the Property you want to paste the copied ease curve on, and press Ctrl + V (Cmd + V on MAC).

Applying Ease to multiple properties

You can now apply preset or custom Ease to property groups. The Motion Editor organizes properties hierarchically in to property groups and subproperties. You can choose to apply Ease at any level, that is, to individual properties or property groups, within this hierarchy.

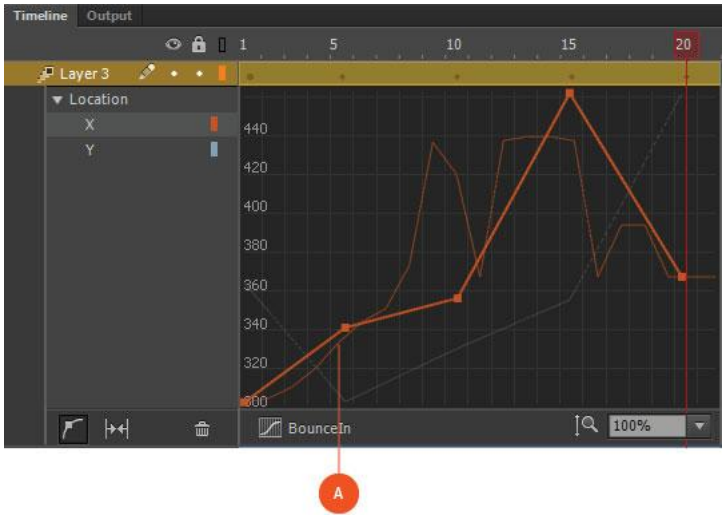
Note that, after you apply Ease to a Property group, you can continue to edit the sub-properties individually. This also means, that you can apply a different Ease (from that of the group) to a subproperty.

To apply Ease to multiple properties, do the following:

1. In the Motion Editor, select the Property Group, and click the Add Ease button to display the Ease panel.
2. On the Ease panel, select a Preset Ease or create a Custom Ease. Click anywhere outside the Ease panel to apply the selected Ease on the Property Group.

Resultant Curve

When you apply an ease curve to a property curve, a visual overlay called the Resultant Curve appears on the grid. The resultant curve is an accurate representation of the effect of Ease applied to a Property curve. It is indicative of the final animation of the tweened object. The resultant curve makes it easier for you to understand the effect that you see on the Stage when testing the animation.



(A) Resultant Curve for Bounce-In preset Ease applied to Location X Property.

Controlling the Motion Editor display

In the Motion Editor, you can control which property curves appear for editing, and the size of the display of each property curve. Property curves that are displayed at a large size are easier to edit.

- The new Motion Editor displays only those Properties that are applied to a tween.
- You can use the fit to view toggle ( ) to fit Motion Editor to the width of the timeline.
- You can adjust the size of the Motion Editor and choose to display less ( ) or more frames ( ) in using the Timeline Zoom controls. You can also use the slider to set an appropriate view of the Motion Editor.
- The Motion Editor is also equipped with vertical zoom toggle. You can use the Vertical Zoom to display a suitable range of property values within the Motion Editor. Zooming in also allows you to make focused and finer edits to a Property Curve.
- The Properties appear expanded in the left pane of the Motion Editor, by default. However, you collapse the drill-down list by clikcing a property name.

Keyboard shortcuts

Double-click - on a property curve to add Anchor Point.**Alt+Drag** - an anchor point to enable Control Points.**Alt+Drag** - to manipulate a selected control point (single-sided editing).**Alt-click** - an anchor point to disable control points (corner point).**Shift+drag** - to move an anchor point in linear direction.**Command/Control + Click** - to delete an anchor point.**Up/down arrow keys** - to move a selected anchor point vertically.**Command/Control + C/V** - to copy/paste a selected curve.**Command/Control + R** - to reverse a selected curve.**Command/Control + Scroll** - to zoom-in/out.

Editing the motion path of a tween animation

When you position a tween instance across the Stage, you see a motion path for that animation to appear on the Stage. Motion path is a line that represents the spatial movement of the tweened instance. Its dots (sometimes called "tween dots" or "frame dots") represent the position of the target object along the path on the timeline. The position of the target object is represented as a single frame, or groups of frames.

You can edit or change the motion path of a motion tween in the following ways:

- Change the position of the object in any frame of the tween span.
- Move the entire motion path to a different location on the **Stage**.
- Change the shape or size of the path with the **Selection**, **Subselection**, or **Free Transform** tools.
- Change the shape or size of the path with the **Transform** panel or **Property inspector**.
- Use the commands in the **Modify** > **Transform** menu.
- Apply a custom stroke as a motion path.
- Use the **Motion Editor**.

You can use the **Always Show Motion** Paths option to show all motion paths on all layers on the **Stage** simultaneously. This display is helpful when designing multiple animations on different motion paths that intersect each other. When a motion path or tween span is selected, you can choose this option from the **Property inspector** options menu.

See also

About motion tween

Creating a Motion tween animation

Animate position with a tween

Using property keyframes

Creating and applying Motion presets

Editing the shape of a motion path with the Selection and Subselection tools

With the **Selection** and **Subselection** tools, you can reshape a motion path. With the **Selection** tool, you can reshape a segment by dragging. Property keyframes in the tween appear on the path as control points. With the **Subselection** tool, you can expose the control points and Bezier handles on the path that correspond to each position property keyframe. You can use these handles to reshape the path around the property keyframe points.

When you create a non-linear motion path such as a circle, you can have the tweened object rotate as it moves along the path. To maintain a constant orientation relative to the path, select the **Orient to Path** option in the **Property inspector**.

A tweened object not oriented to the motion path (left) and oriented to the motion path (right).

1 Click the **Selection** tool in the **Tools** panel.

2 Click the tween target instance so that the motion path becomes visible on the **Stage**.

3 With the **Selection** tool, drag any segment of the motion path to reshape it. Do not click to select the segment first.

4 To expose the Bezier control points of a property keyframe point on the path, click the **Subselection** tool and then click the path.

The property keyframe points appear as control points (small diamonds) on the motion path.

5 To move a control point, drag it with the **Subselection** tool.

6 To adjust the curve of the path around a control point, drag the Bezier handles of the control point with the **Subselection** tool.

If the handles are not extended, you can extend them by Alt-dragging (Windows) or Option-dragging (Macintosh) the control point.

? To delete an **Anchor point**, select the **Delete Anchor Point** tool. Most anchor points generated with **Selection** tool are smooth points. To convert an anchor point, select the **Convert Anchor Point** tool. The anchor changes to an angle point.

? You can also pull out new Bezier handles from a point and position them, just as you would for a regular anchor point.

Note:

*You can't add anchor points to the path with **Add Anchor point** tool.*

Changing the position of the tweened object

To edit a motion path, move the target instance of the tween on the **Stage** in any frame of the tween span. If the current frame does not already contain a property keyframe, Animate adds one to it.

1 Place the playhead in the frame where you want to move the target instance.

2 With the **Selection** tool, drag the target instance to a new location on the **Stage**.

The motion path updates to include the new location. All other property keyframes in the motion path remain in their original locations.

Changing the location of a motion path on the Stage

You can drag the entire motion path on the **Stage** or set its location in the **Property inspector**.

1 Click the Selection tool in the Tools panel.

2 Select the motion path by doing one of the following:

- Click the tween span in the **Timeline** and then click the motion path on the **Stage**.
- Click the tweened object on the **Stage** and then click the motion path.
- Drag a marquee around the motion path and the target instance to select them both.
- (CS5.5 only) Select multiple motion paths by Shift-clicking the motion path of each tween you want to edit. You can also drag a marquee around all the motion paths.

3 Move the motion path by doing one of the following:

- Drag the path to desired location on the **Stage**.
- Set the x and y values for the path in the **Property inspector**. The x and y values are for the upper-left corner of the bounding box of the motion path.
- Use the arrow keys to move the motion path.

Editing a motion path with the Free Transform tool

1. Click the **Free Transform** tool in the **Tools** panel.
2. With the **Free Transform** tool, click the motion path. Do not click the tween target instance.
3. Scale, skew, or rotate the path with the **Free Transform** tool.

Deleting a motion path from a tween

1. Select the motion path on the **Stage** by clicking it with the **Selection** tool.
2. Press the **Delete** key.

Copying a motion path as a stroke

1. Click the motion path on the **Stage** to select it.
2. Choose **Edit** > **Copy**.

You can then paste the path into another layer as a stroke or as a motion path for another motion tween.

Applying a custom stroke as a motion path

You can apply a stroke from a separate layer or a separate timeline as the motion path for a tween.

1. Select a stroke on a layer separate from the tween layer and copy it to the clipboard. The stroke must not be closed. Only uninterrupted strokes can be used.
2. Select a tween span in **Timeline** and paste the stroke. Animate applies the stroke as the new motion path for the selected tween span. The target instance of the tween now moves along the new stroke.
3. To reverse the start and end points of the tween, Right-click (Windows) or Ctrl-click (Macintosh) the tween span. Select **Motion Path** > **Reverse Path** in the tween span context menu.

Frame-by-frame animation in Animate CC

Create frame-by-frame animations

Frame-by-frame animation changes the contents of the Stage in every frame. It is best suited to complex animation in which an image changes in every frame instead of simply moving across the Stage. Frame-by-frame animation increases file size more rapidly than tweened animation. In frame-by-frame animation, Animate CC (formerly Flash Professional CC) stores the values for each complete frame.

To create a frame-by-frame animation, define each frame as a keyframe and create a different image for each frame. Each new keyframe initially contains the same contents as the keyframe preceding it, so you can modify the frames in the animation incrementally.

1. Click a layer name to make it the active layer, and select a frame in the layer where the animation is to start.
2. If the frame isn't already a keyframe, select Insert > Timeline > Keyframe.
3. Create the artwork for the first frame of the sequence. Use the drawing tools, paste graphics from the Clipboard, or import a file.
4. To add a keyframe whose contents are the same as the first keyframe, click the next frame to the right in the same row. Select Insert > Timeline > Keyframe, or right-click (Windows) or Control-click (Macintosh) and select Insert Keyframe.

5 To develop the next increment of the animation, alter the contents of this frame on the Stage.

6 To complete your frame-by-frame animation sequence, repeat steps 4 and 5 until you've built the desired motion.

7 To test the animation sequence, select Control > Play or click the Play button on the Controller (Window > Toolbars > Controller).

Creating frame-by-frame animations by converting classic or motion tweens

You can convert a classic tween or a motion tween span to frame-by-frame animation. In frame-by-frame animation, each frame contains separate keyframes (not property keyframes) which each contains separate instances of the animated symbol. Frame-by-frame animation does not contain interpolated property values.

? Right-click (Windows) or Ctrl-click (Macintosh) the tween span you want to convert and choose Convert to Frame by Frame Animation from the context menu.

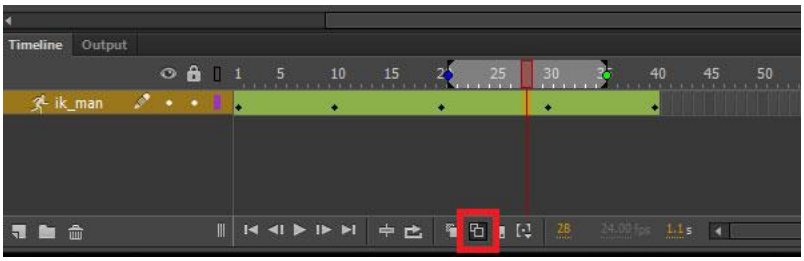
Use onion skinning

Usually, one frame of the animation sequence at a time appears on the Stage. To help position and edit a frame-by-frame animation, view two or more frames on the Stage at once. The frame under the playhead appears in full color and apply color and alpha to differentiate between past and future frames.

Color coded onion skin is applied by default. To retain the old behavior, ensure to modify the past and future frames to black.

Simultaneously view several frames of an animation on the Stage

? Click the Onion Skin button . All frames between the Start Onion Skin and End Onion Skin markers (in the Timeline header) are superimposed as one frame in the document window.



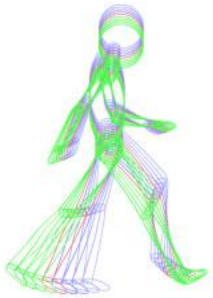
Onion skin markers

Color Coded Onion Skinning

Onion skinning color coding helps you distinguish between the past, present, and future frames. Onion skin frames that move away from active frame appear with progressively decreasing transparency.

Onion skinning on the timeline

Color-coded onion skinning that shows the past, present, and future frames



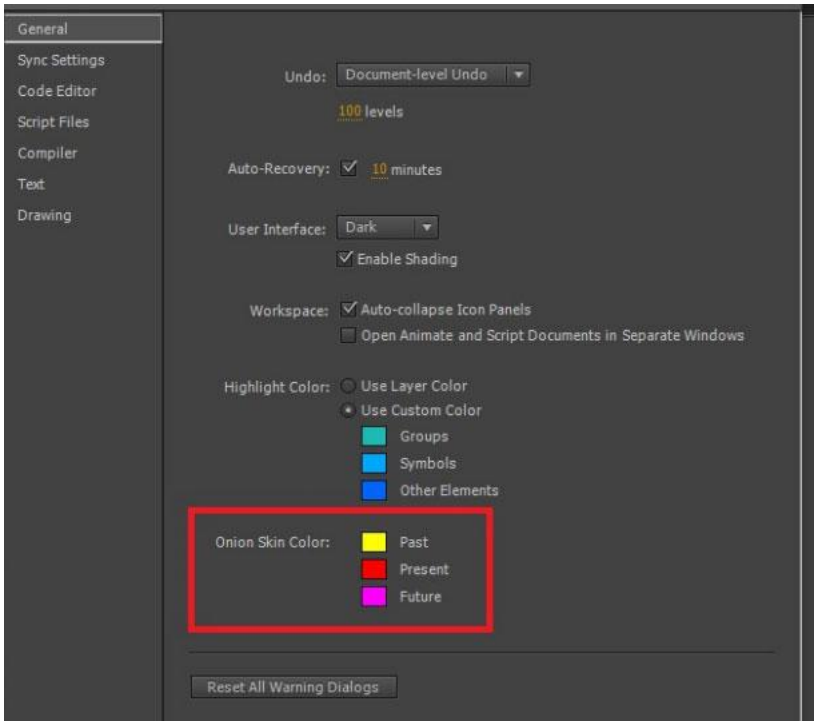
Onion Skinning Outline Mode

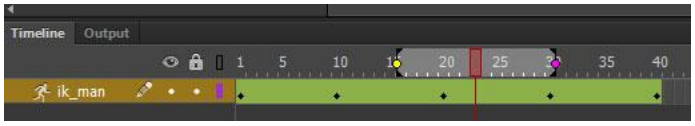
Customizing Colors for Onion Skin Display

1. To customize the color of the onion skin frames, select the **Onion skin frame** in the Timeline bar.
2. Select **Edit>Preferences**.
3. In the **Onion Skin Color** option, select the color swatch buttons to customize and set colors for the **Past, Present, and Future** frames.

Note:

Color code is also applicable for outline mode.





Onion Skin Timeline Mode

Customized Onion skinning

- To change the position of either onion skin marker, drag its pointer to a new location. Normally, the onion skin markers move with the current frame pointer. Use Control/Command+ drag to increase or decrease the position on both sides.
- To enable editing of all frames between onion skin markers, click the Edit Multiple Frames button . Usually, onion skinning lets you edit only the current frame. You can display the contents of each frame between the onion skin markers and edit them.
- To move the loop range across the timeline to any position that includes the playhead position, use the markers in the timeline to hold the Shift key and drag the range.
- To set the range markers, use the Shift key and drag the range markers or the loop range using the markers across the Timeline.

Note:

Locked layers (with a padlock icon) are not displayed when onion skinning is turned on. To avoid a multitude of confusing images, lock or hide the layers you don't want to be onion skinned.

Change the display of onion skin markers

? Click the Modify Onion Markers button and select an item:

Always Show Markers Displays the onion skin markers in the Timeline header whether or not onion skinning is on.

Anchor Onion Locks the onion skin markers to their current position in the Timeline header. Usually, the onion skin range is relative to the current frame pointer and the onion skin markers. Anchoring the onion skin markers prevents them from moving with the current frame pointer.

Onion 2 Displays two frames on either side of the current frame.

Onion 5 Displays five frames on either side of the current frame.

Onion All Displays all frames on either side of the current frame.

Video

Preview your work

To check how your onion skinning is coming along, hover the mouse across the entire span on the timeline. Your animation plays in colored outlines giving you a precise preview of the changes.

Manipulating motion tweens

There are numerous ways you can select frames of an animation and move them around on a timeline. There are also many ways to modify your animation so it plays exactly the way you want it to when you publish your files.

Tween layers can contain tween spans, static frames, and blank keyframes. You can use the static and blank frames to draw on the frame, paste graphics, import a bitmap to the selected frame, and so on. These spans and frames can be moved within the same layer, or to most other layers. A tween layer cannot contain IK spans or classic tweens.

Tween spans cannot contain an ActionScript either on the frame or attached to a tweened object. However, a frame outside a tween span on a tween layer can contain an ActionScript. Ensure to put all your code on its own layer called actions (typically the topmost layer on the main Timeline).

Use the following context menu options in the tween layers to manipulate tweens:

- Refine tween: Removes the motion tween from the selected tween span.
- Remove tween: Removes the motion tween from the selected tween span.
- 3D tween: Adds or removes the 3D properties of a tween (you can see them in the Motion Editor). 3D is automatically activated if you use a 3D tool with the instance before or after you add the motion tween.
- Convert to Frame by Frame Animation: Converts the currently selected span into a frame-by-frame animation.
- Save as Motion Preset: Saves the currently selected span as a Motion Preset.
- Insert Frame: Inserts the number of selected frames into the tween span.
- Remove Frames: Removes the selected frames from the tween span or static frames. If an entire span is selected, it removes the entire span.
- Insert Keyframe: Lets you choose what type of property keyframe to insert from a submenu. For example, you can insert a rotation property keyframe using this menu.
- Insert Blank Keyframe: You can use this option to insert a blank keyframe on an empty frame. This option is dimmed if your selection is within a tween span.
- Clear Keyframe: If used within a tween span, you can select from a submenu to remove a type of property keyframe from the currently selected frames. The option does not remove the keyframe at frame 1. Outside a tween span, use this option to remove the selected keyframes.
- View Keyframes: Use this option to choose which kinds of property keyframes you would like to see on the selected tween span. The default setting is All, but you can choose to one or more types of property keyframes.
- Cut/Copy/Paste Frames: Use this option to cut or copy some or all frames from a tween span, and paste them to a new location.
- Clear Frames: You can use Clear Frames to turn the selected frames into blank frames. If your selection is in the middle of a tween span, it creates two individual tween spans around the blank frames.
- Select All Frames: Use this option to select all frames on a timeline.
- Copy/Paste Motion: Use these options to copy all the properties of the selected motion, and paste it to another instance.

- Copy/Paste Properties: Use these options to copy the property keyframes from an individual frame and paste property keyframes at a different frame. Ensure that you select one frame to use this option.
- Paste Properties Special: Use this option after you have copied the properties of a selected frame.
- Split Motion: Use Split Motion to turn a single tween span into two tween spans. This option is available when you select a single frame.
- Join Motions: Use Join Motions to turn contiguous tween spans into a single tween span. This option is available when you select two or more contiguous tween spans.
- Reverse Keyframes: Use this option to reverse the keyframes for all the properties of a selected tween span.
- Motion Path > Switch keyframes to roving/non-roving: Use this option to switch the keyframes of a selected span between roving and non-roving.

See also

Creating a motion tween animation

Animating position with a tween

Editing the motion path of an animation

Adding custom eases

Setting up animation tween spans

Creating and applying Motion Presets

Copy and paste a motion tween

You can copy the tweened properties from one tween span to another. The tweened properties are applied to the new target object, but the location of the target object is not changed. You can apply a tween from one area of the Stage to an object in another area without repositioning the new target object.

1. Select the tween span that contains the tweened properties you want to copy.
2. Select Edit > Timeline > Copy Motion.
3. Select the tween span to receive the copied tween.
4. Select Edit > Timeline > Paste Motion.
5. Animate applies the tweened properties to the target tween span and adjusts the length of the tween span to match the copied tween span.

To copy a motion tween to the Actions panel or use it in another project as ActionScript®, use the Copy Motion as ActionScript 3.0 command.

Copy and paste motion tween properties

You can copy the properties from a selected frame to another frame on the same tween span or a different tween span. The property values are added only to the selected frame when the properties are pasted. 2D position properties cannot be pasted onto a 3D tween.

These instructions assume that Span-Based Selection is turned on in the **preferences (Edit >Preferences)**.

1. To select a single frame in a tween span, Ctrl+Alt-click (Windows) or Command+Option-click (Macintosh) the frame.
2. Right-click (Windows) or Command-click (Macintosh) the selected frame and choose Copy Properties from the context menu.
3. Select a single frame to receive the copied properties by Ctrl+Alt-clicking (Windows) or Command+Option-clicking (Macintosh) the frame. The destination frame must be in a tween span.
4. To paste the copied properties into the selected frame, do one of the following:

- To paste all the copied properties, right-click (Windows) or Command-click (Macintosh) the selected frame of the target tween span. Choose Paste Properties from the context menu.
- To paste some of the copied properties, right-click (Windows) or Command-click (Macintosh) the selected frame of the target tween span. Choose Paste Properties Special from the context menu.
- In the dialog box that appears, select the properties to paste and click OK.

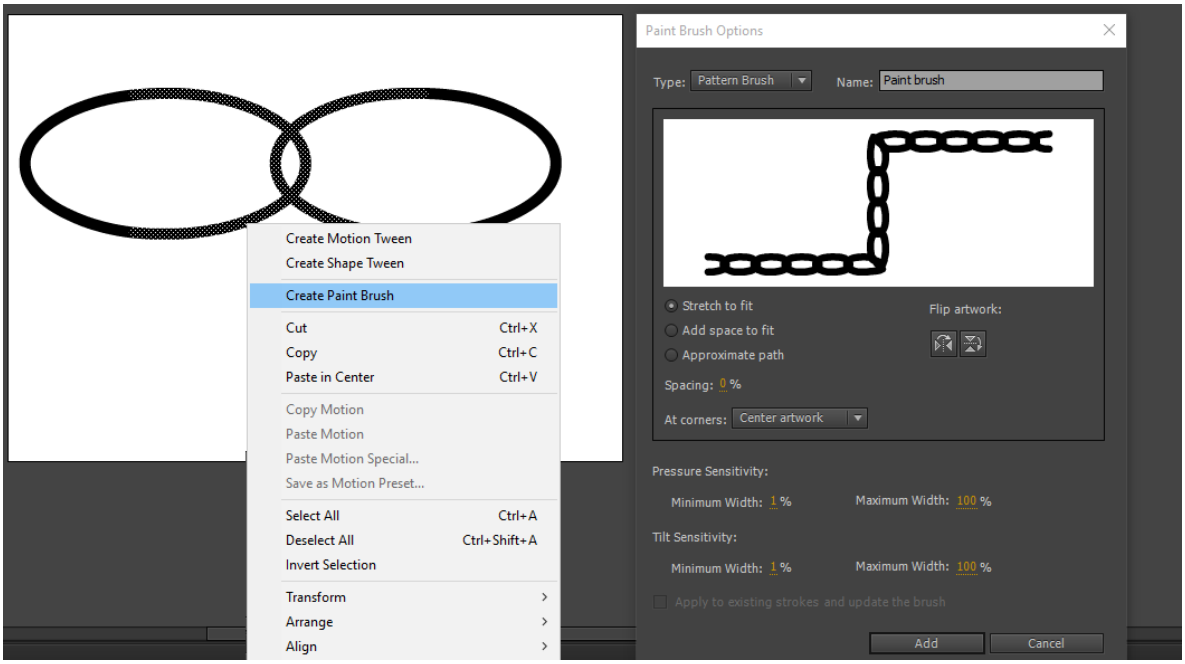
Chapter 3: Workspace and workflow

Creating and managing Paint brushes

Animate introduces the ability to create and share vector brushes (art and pattern brushes) using shapes drawn within Animate. Before introduction of this feature, you could use Adobe Capture app to create brushes, and sync them to Animate from CC library. This feature allows you to create custom brushes from vector assets within Animate CC.

1 Draw the artwork or use an existing shape on stage.

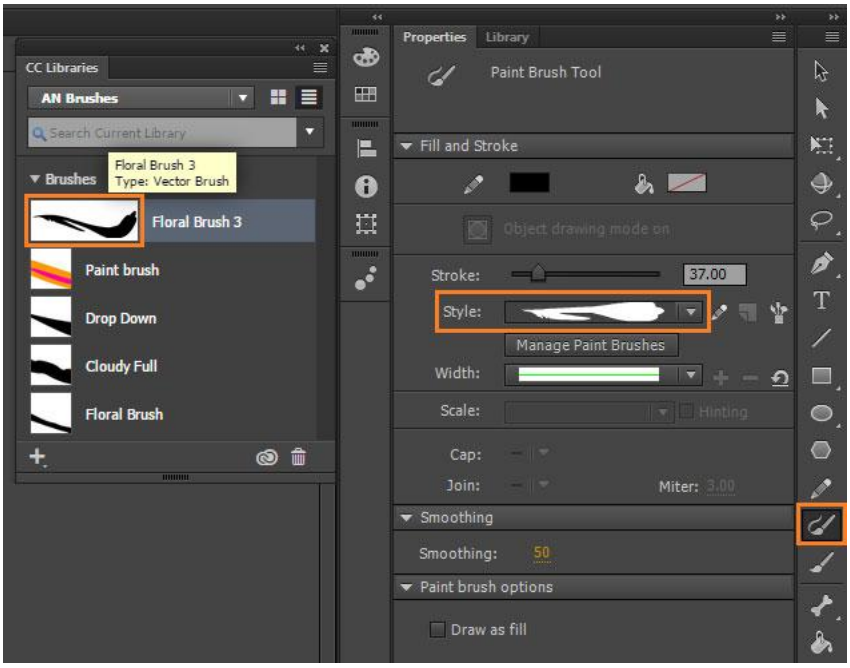
2 Select the shape, right-click, and select Create Paint Brush or click on the Create New Paint Brush button in the Properties panel.



Add Paint Brush

3 Set the various paint brush options. For more information on setting these options, see Editing Pattern Brushes.

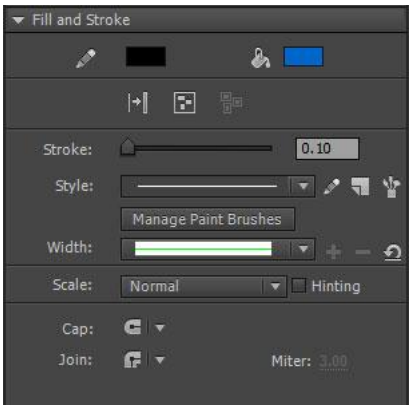
4 Click Add to add the brush to the document. You can view the new brush in the Stroke drop-down list in the Properties panel.



Use brush from CC library

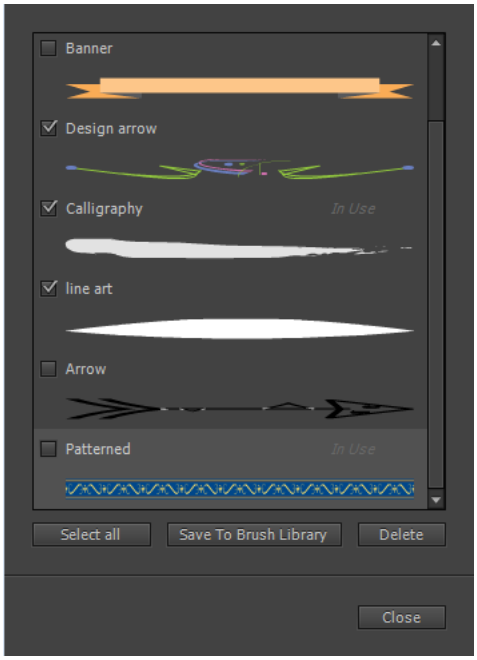
Saving or deleting document brushes

1 Click Manage brushes in the Properties panel. Use the Manage brushes option to save the new brushes for future usage or delete unused brushes from the document.



Manage brushes

2 In the Manage Document Brushes screen, select a single brush or select multiple brushes.

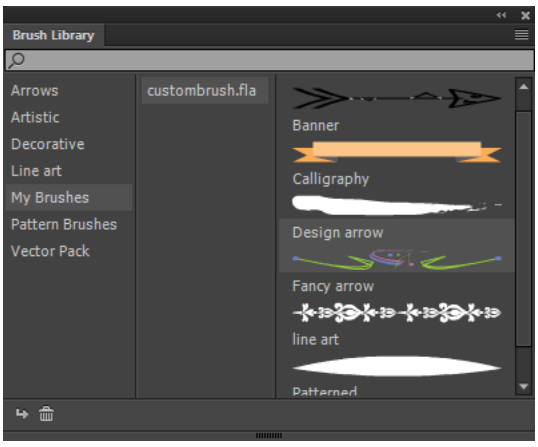


Select brushes

3 Click Save to save the brushes or Delete to delete the brushes from the Brush library. You can view the saved brushes within My Brushes family in the Brush Library.

Note:

In the Brush Library, the Brush family name is same as the document name within which it is created. Brushes from two different documents with the same file name are saved within the same family in the Brush Library.



My brushes

Using Brushes from the Brush library

1 In the Brush Library panel, select one or more brushes or click on a brush family.

2 Click on the Use in document button at the bottom left-hand corner of the panel to add the selected brushes to the document. The brush is displayed in the Stroke drop-down list in the Properties panel.

Note:

You can also double-click on a brush to add it to the document.

3 To delete unwanted brushes from My Brushes family, click the Delete button at the bottom of the panel.

Pressure and Tilt in Paint Brush

Animate CC provides Pressure and Tilt support for strokes drawn using the Paint brush tool. You can draw art and pattern strokes with variable width, dependent on the applied pressure or tilt on the stylus. For further refinement, use the Width tool to adjust the width points.

For more information, see Working with PaintBrush.

Note:

Pressure and tilt icons in the tool bar are displayed only if you have connected a Wacom pressure-sensitive tablet to your computer.

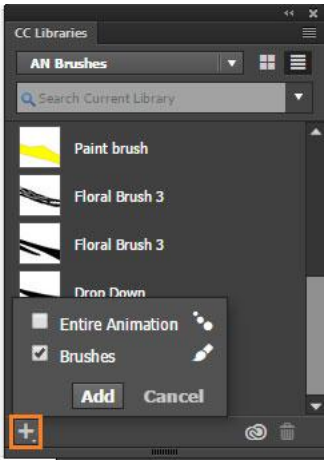
Adding Art brushes to CC library

1 Use the Paint brush tool to draw a stroke on stage and select it.

2 In the CC libraries panel, click the + button at the bottom of the panel, select Brushes > Add.

Note:

Brushes upload option is enabled only if the selected shape on stage uses Art brushes. Pattern brushes cannot be saved to the CC library.



Add brushes to CC library

Using brushes from CC library

1 Select the Paint Brush tool. Click on the brush or right-click on the brush in CC library, and select Use in document.

2 The added brush is set as the active stroke style and can be used in the document. It is also added to the Brush library.

Using Google fonts in HTML5 Canvas documents

When you use desktop fonts to create and publish your web outputs, customer experience is not optimal. Animate introduces Google fonts that provide a consistent typographic experience across all form factors. Google fonts are free open source fonts served by Google servers. For more information on Google fonts and the original font designers, see https://fonts.google.com/about and https://fonts.google.com/attribution.

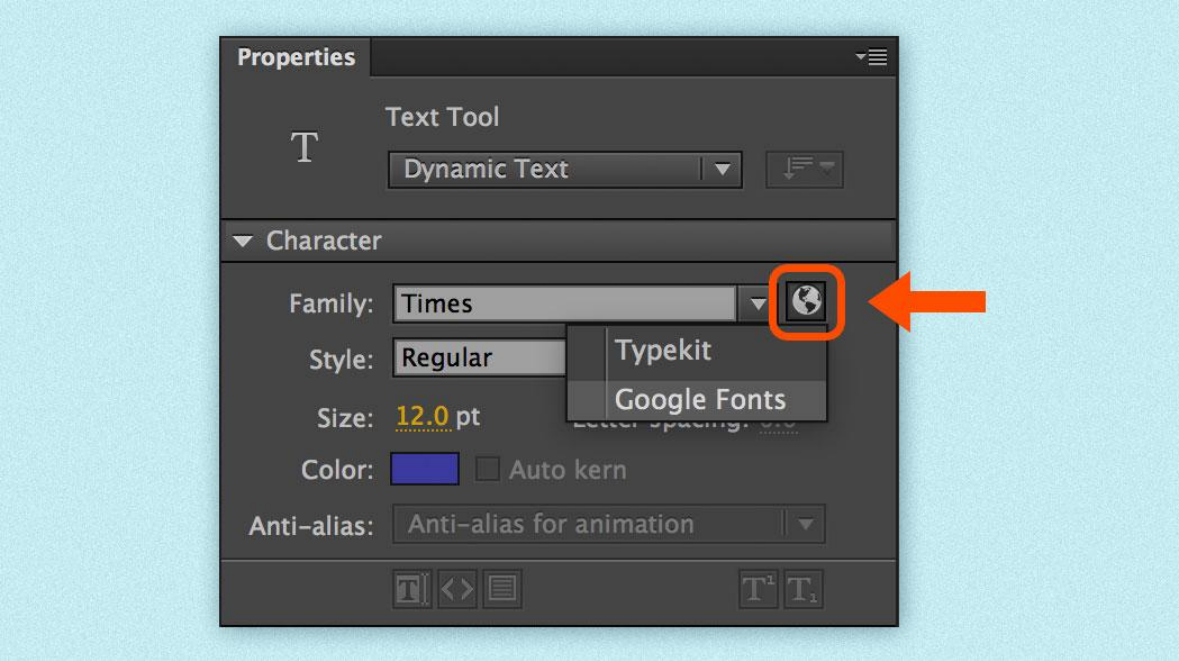
Advantages of using Google fonts are:

- Caching: After an initial download, the fonts are stored in your local systems and you do not have to download them repeatedly. This loads the text faster.
- Open source: They are freely available, and can be redistributed or modified based on your requirements.
- Compatiblity: They work seamlessly with your advertising and web content.
- Responsive: They provide a responsive content experience across all form factors for a consistent aesthetic appeal.

1 Open your HTML5 Canvas document and select the Text tool in the Tools panel.

2 In the Properties panel, select Dynamic Text.

3 Click the Add Web fonts icon and select Google Fonts.



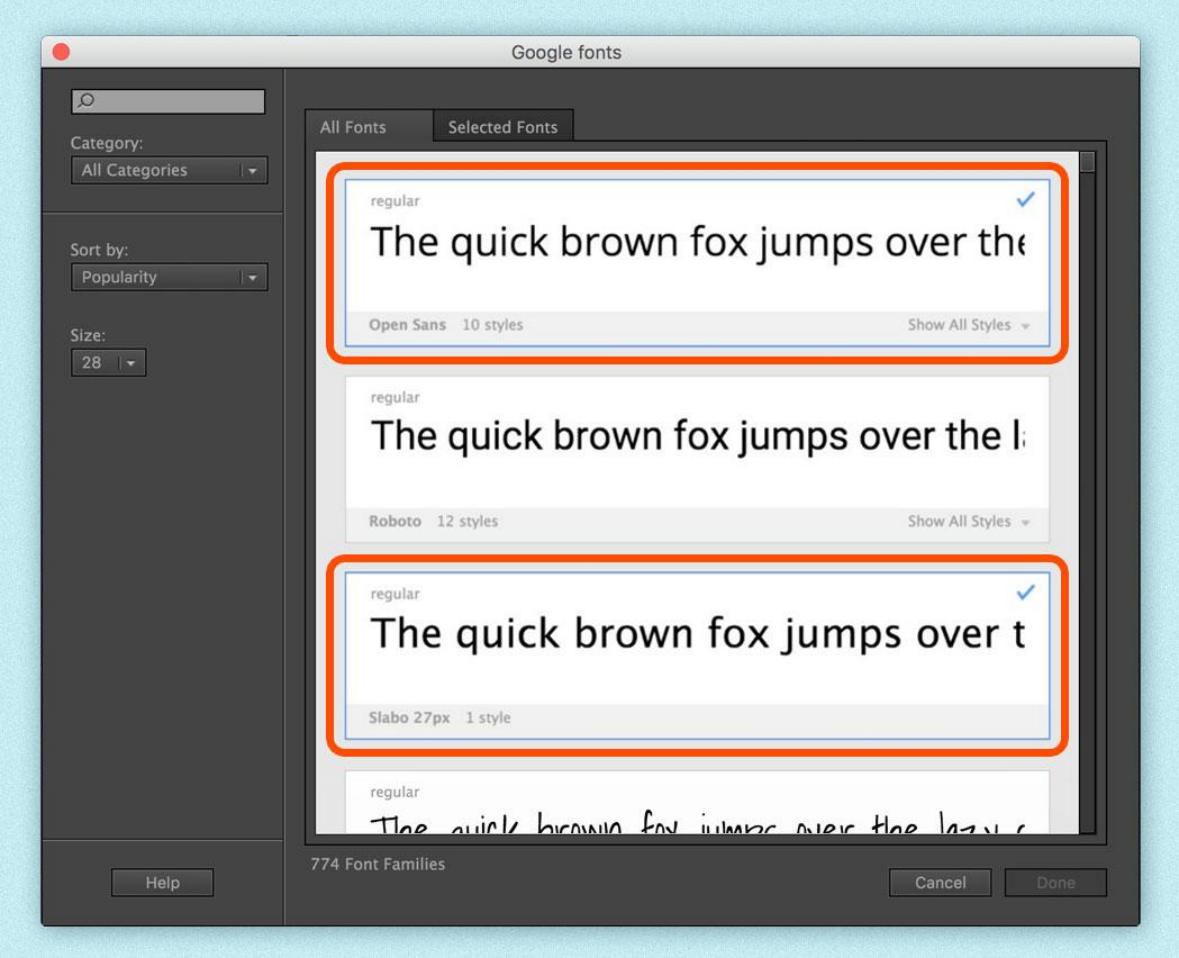
Select Google fonts dialog box

4 The Google fonts dialog box lists all the available web fonts. You can now select the font that best suits your design needs by browsing through fonts, searching for specific fonts, or filtering by font properties.

- Search: Searches the font by names.
- Category: Filters fonts based on the available categories.
- Sort by: Sorts the fonts based on the following categories:
  - Popularity: Sorts based on the popular fonts.

- Alphabet: Sorts an alphabetical list of fonts.
- Date Added: Sorts based on the dates when they were added to the document.
- Number of Styles: Sorts based on the number of styles available for each font family.
- Trending: Sorts based on the trending font categories.

- Help: Displays the online Help for Google fonts.
- Cancel: Cancels the font selections.
- Done: Adds the selected font to the document.



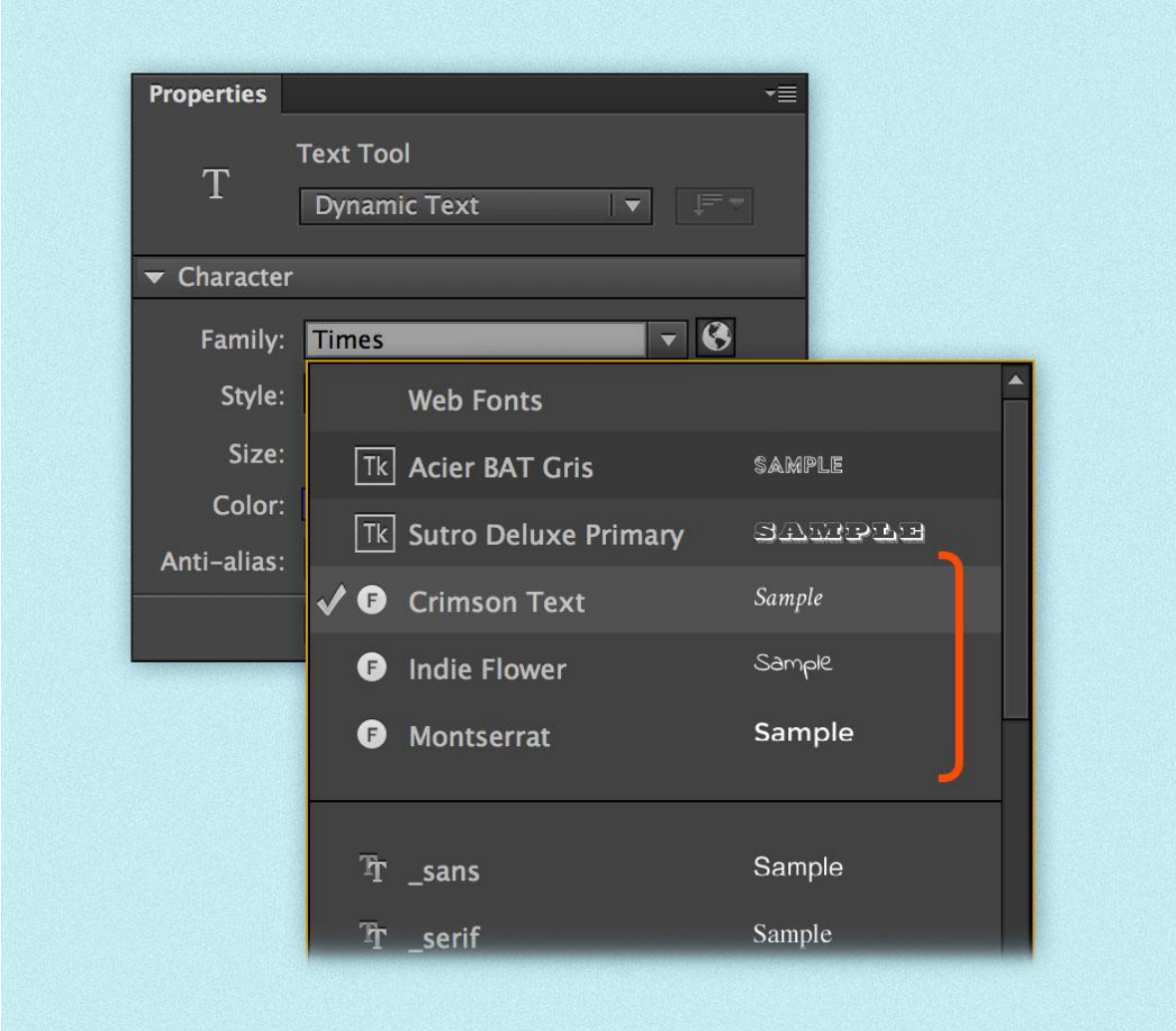
Google fonts dialog box

5 To add a font to the document, click the font that you want to use and select Done. A check mark indicates that the font is selected.

Note:

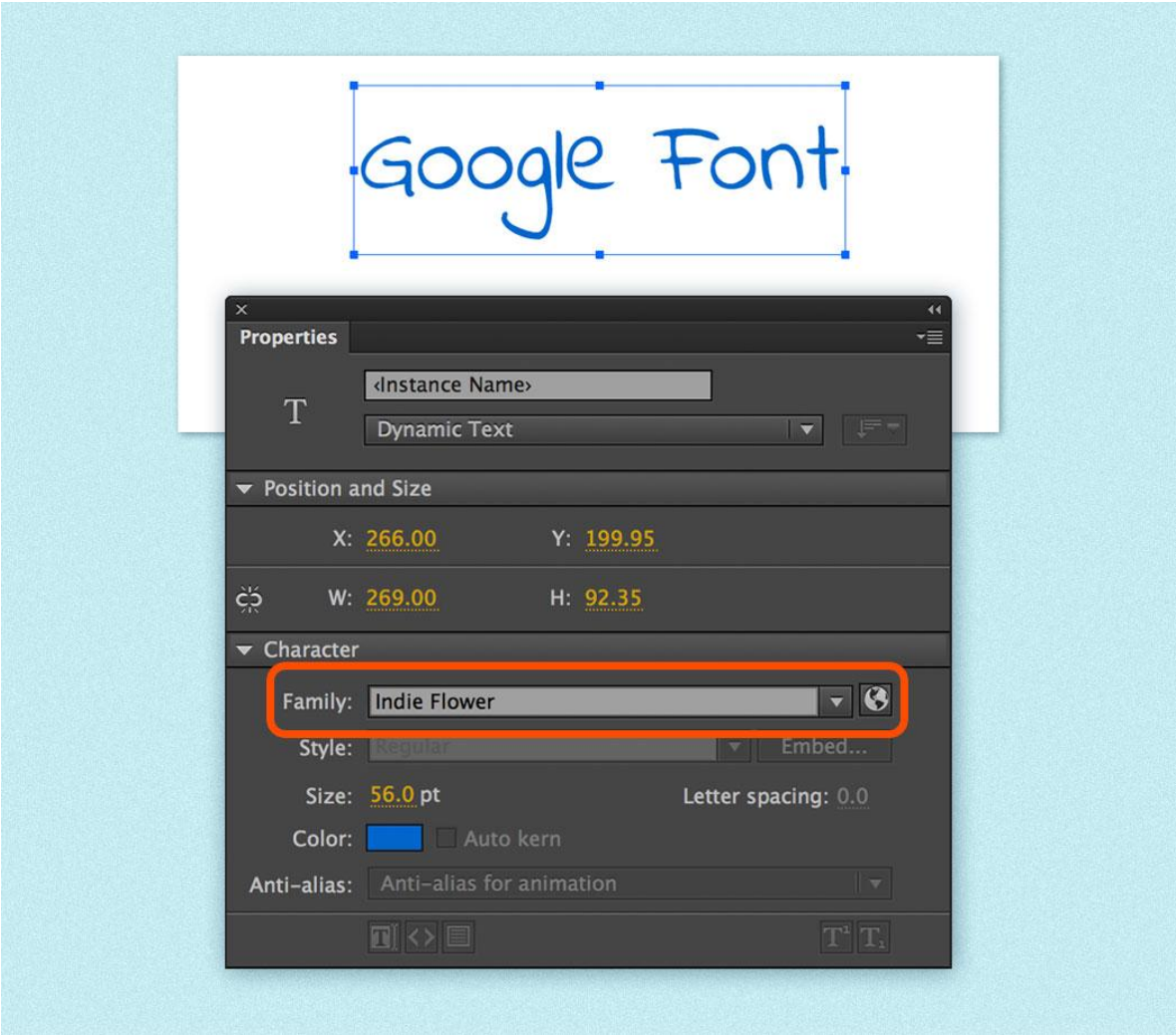
You can also select and add multiple fonts.

6 To view the added fonts in Animate CC, select **Character** > **Family** in Property Inspector.



Selected Google font in the Property inspector

7 In the Character Family drop-down list, select the added Google font to use in an HTML5 Canvas document.



Using the selected font in the document

See also

- Using Typekit Web fonts in HTML5 Canvas documents

Using Creative Cloud Libraries and Adobe Animate CC

About Creative Cloud Libraries

Creative Cloud Libraries make your assets available to you anywhere. Create images, colors, color themes, brushes, shapes, and more in Photoshop, Illustrator, and mobile apps such as Adobe Capture CC, and then easily access them across other desktop and mobile apps for a seamless creative workflow.

Animate CC (formerly Flash Professional CC) comes integrated with CC Libraries. CC Libraries help you keep track of all your design assets. When you create graphic assets and save them to Libraries, they are available for use in your Animate documents. Design assets are automatically synced, and can be shared with anyone with a Creative Cloud account. As your creative team works across Adobe desktop and mobile apps, your shared library assets are always up to date and ready to use anywhere.This pre-release drop supports options to import from libraries and reuse graphics. Asset types supported in Animate are:

- Colors and Color Themes
- Brushes
- Graphics
- Vector Brushes

To learn more, see Creative Cloud Libraries.

Use colors, brushes, and shapes created using mobile apps in your Animate document

You can use the graphics and design assets created using Adobe mobile apps such as Adobe Capture CC in your Animate document by using the new CC Library panel. You can save and share the colors, color themes, shapes, and brushes that you and other collaborators create through CC libraries so that you can use them in any other Adobe app that supports CC Libraries, such as Animate.

Adobe Capture CC is an Adobe mobile application that allows you to:

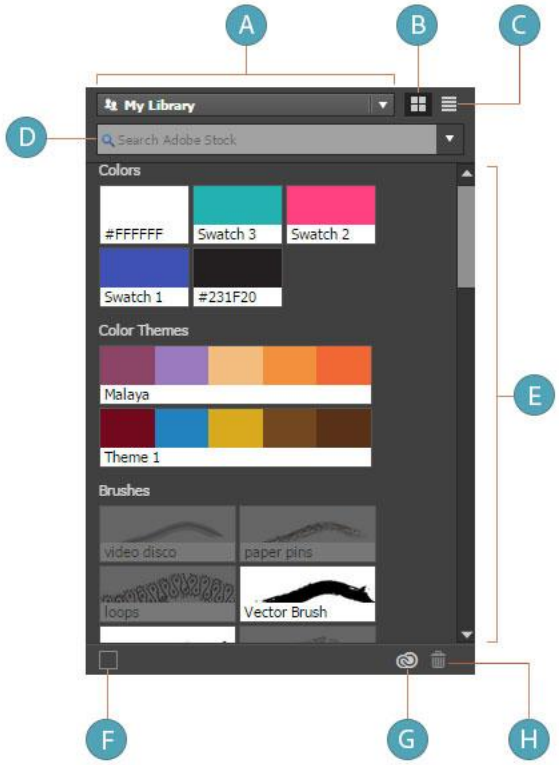
- Create custom brushes from photos you capture on your iPhone, iPad, or Android devices and start using them right away in Adobe Animate. To use the brushes that you have captured using the Brush app, you must store them in your CC library.
- Capture shapes with your iPhone, iPad or Android devices and turn them into vectors you can use in your designs. Save them to Creative Cloud Libraries for quick access in Adobe apps and share your Libraries with your creative team.
- Capture color combinations whenever inspiration strikes using your iPhone, iPad or Android devices. Your color themes are automatically saved to Creative Cloud Libraries for access in desktop and mobile apps, or to share with your team.

For more information about creating vectors, brushes, shapes, and colors for using them in Animate CC, see Adobe Capture CC

Using Creative Cloud Libraries

Creative Cloud Library panel in Animate CC lists all the creative assets that you have stored in your libraries along with the assets that others have shared with you.

The following illustration describes the CC Library panel in detail.



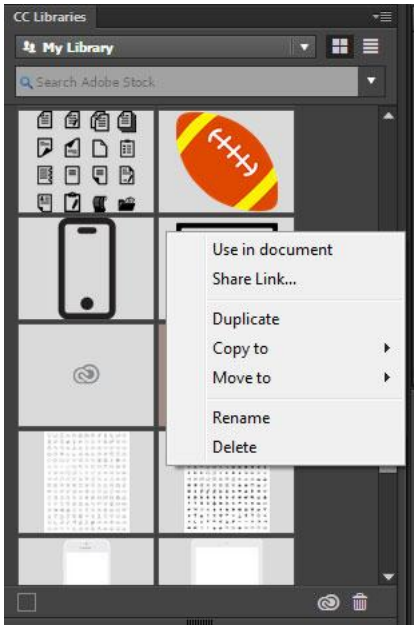
***A** CC Library folder **B** Show items as icons **C** Show items as a list **D** Search Adobe Stock for images **E** CC Library content panel **F** Add color **G** Sync CC Libraries **H** Delete an item in library*

To use CC libraries

1 Click Window > CC Libraries to launch the CC Libraries panel. You can see all the assets that you have saved in your CC library.

2 You can do the following:

- Drag-and-drop an asset from library to stage.
- Click on a color theme to apply the theme to an object on stage.
- Click on a vector brush in your library to use it on stage.



Modifying assets in your CC Library and using them on an Animate document

Location of CC Library assets on your desktop

Your creative cloud assets are synced to a directory on your desktop. For example, on Windows, the location can be **C:\Users\<username>\Creative Cloud Files**

Create a new CC Library

You can create a new library to store your creative assets online. A library can store up to 1000 assets and there is no limit to the number of libraries that you can create. The assets you store in the library are locally stored, but synchronized with Creative Cloud.

Sharing your library and assets

You can collaborate with other users and share a folder or library from your Creative Cloud account with specified Creative Cloud users. All invited users can then work co-operatively with the assets in the shared folder or library. Collaborators can view, edit, rename, move, or delete contents of the shared folder or library. To know more about collaborating using CC Libraries, see Collaborate on libraries.

To share public links to files and folders with others (share assets with read-only access), see Share files and folders.

For more information about libraries in Creative Cloud, see Creative Cloud libraries.

Using Creative Cloud libraries in Adobe Animate CC

Using Creative Cloud libraries in Adobe Animate CC

About Adobe Stock

For detailed instructions on how to use Adobe Stock, refer to the Adobe Stock help page at https://helpx.adobe.com/stock/help/using-adobe-stock.html. **Note**: Adobe Stock is available only in following countries right now: US, Canada, Mexico, UK, Ireland, South Africa, New Zealand, Australia, Japan, Netherlands, Norway, Sweden, Denmark, Belgium, Switzerland, Finland, Luxembourg, Germany, France, Italy, Austria, Spain, Portugal, Greece, Poland, Czech Republic, Bulgaria, Estonia, Latvia, Lithuania, Hungary, Malta, Romania, Slovenia, Slovakia, and Cyprus. For more details, see https://helpx.adobe.com/stock/faq.html

Using Adobe Stock in Animate CC

Using the Search Adobe Stock option in the CC Library panel, you can search for images in Adobe Stock, preview an image in your library, buy the image, and then add it to the document. The images that you add to the stage can then be animated.

Searching and importing images from Adobe Stock

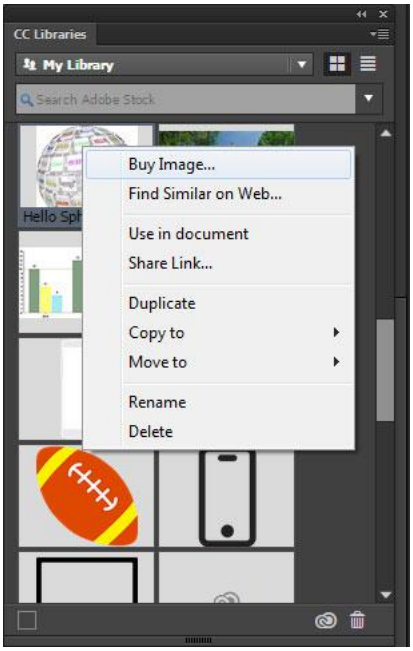
1 Click **Windows > CC Libraries**. The **CC Library** panel appears.

Searching Adobe Stock for images

2 In the **Search Adobe Stock** box, type your search keyword and press **Enter**. The search results appear in the content pane of the Library panel.

3 Hover your cursor on the image that you want to use in your Animate document. The following options appear:

- **Buy and Save to My Library**: To buy the image. You can also right-click the image and select **Buy Image**.
- **Save Preview to My Library**: Saves a watermarked preview image to your CC Library.



4 Using the options in the context menu, you can do the following tasks on a stock image:

- Buy the selected image
- Find similar images on the Web
- Use the image in your Animate document by adding it to stage
- Share the link to the image
- Make a duplicate copy of the image
- Copy or Move the image to a folder in your CC library
- Rename the image
- Delete the image from library

Using Adobe Stock assets in Animate CC

Using Adobe Stock assets in Animate CC

Use the Stage and Tools panel for Animate

Welcome screen overview

When Animate CC (formerly Flash Professional CC) is running with no documents open, the Welcome screen appears. The Welcome screen contains the following four areas:

Open a Recent Item Lets you open your most recent documents (click the Open icon).

Create New Lists Animate file types, such as Animate documents and ActionScript® files.

Create from Template Lists the templates most commonly used to create Animate documents.

Extend Links to the Animate Exchange website, where you can download helper applications, extensions, and related information.

The Welcome screen also offers quick access to Help resources. You can take a tour of Animate, learn about documentation resources, and find Adobe Authorized Training facilities.

- To hide the Welcome screen, select Don't Show Again.
- To show the Welcome screen, select Edit > Preferences (Windows®) or select Animate > Preferences (Macintosh®), and select Welcome Screen from the On Launch menu in the General category.

Using the Stage

The Stage is the rectangular area where you place graphic content when creating Animate documents. The Stage in the authoring environment represents the rectangular space in Flash Player or in a web browser window where your document appears during playback. A default black outline represents the outline view of the stage.

To change the view of the Stage as you work, zoom in and out. To help you position items on the Stage, you can use the grid, guides, and rulers.

The Timeline and Stage with content.

Zoom the stage

To view the entire Stage on the screen, or to view a particular area of your drawing at high magnification, change the magnification level. The maximum magnification depends on the resolution of your monitor and the document size. The minimum value for zooming out on the Stage is 8%. The maximum value for zooming in on the Stage is 2000%.

Note:

You can also use multi-touch gestures in compatible devices.

- To zoom in on an element, select the Zoom tool in the Tools panel, and click the element. To switch the Zoom tool between zooming in or out, use the Enlarge or Reduce modifiers (in the options area of the Tools panel when the Zoom tool is selected) or Alt-click (Windows) or Option-click (Macintosh).

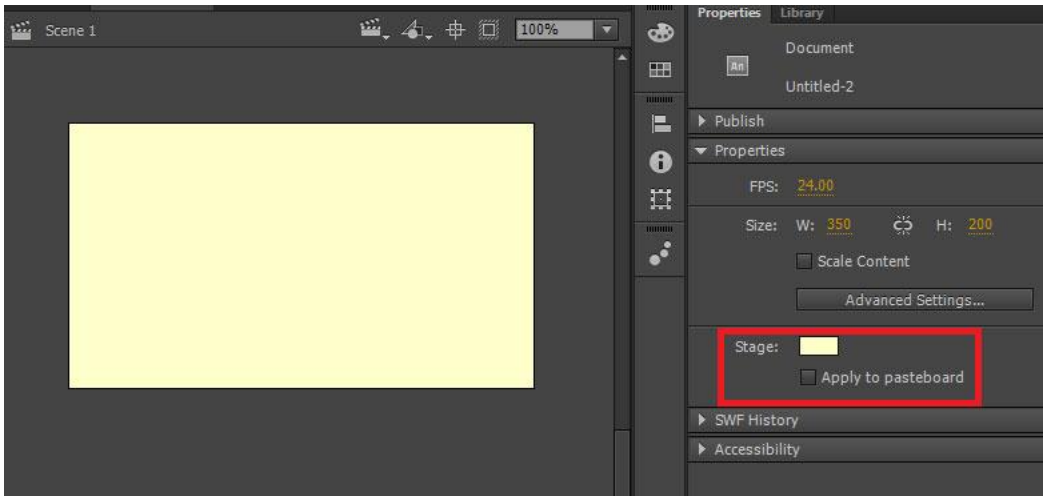
- To zoom in so that a specific area of your drawing fills the window, drag a rectangular selection on the Stage with the Zoom tool.
- To zoom in on or out of the entire Stage, select View > Zoom In or View > Zoom Out.
- To zoom in or out by a specified percentage, select View > Magnification, and select a percentage from the submenu or select a percentage from the Zoom control at the upper-right corner of the document window.
- To scale the Stage so that it fits completely in the application window, select View > Magnification > Fit in Window.
- To crop the content that flows outside the stage, click the Clip the Content Outside Stage icon .
- To show the contents of the current frame, select View > Magnification > Show All, or select Show All from the Zoom control at the upper-right side of the application window. If the scene is empty, the entire Stage appears.
- To show the entire Stage, select View > Magnification > Show Frame or select Show Frame from the Zoom control at the upper-right corner of the document window.
- To show the workspace surrounding the Stage, or to view elements in a scene that are partly or outside of the Stage area, select View > Pasteboard. The pasteboard appears in light gray. For example, to have a bird fly into a frame, initially position the bird outside of the Stage in the pasteboard and animate it into the Stage area.

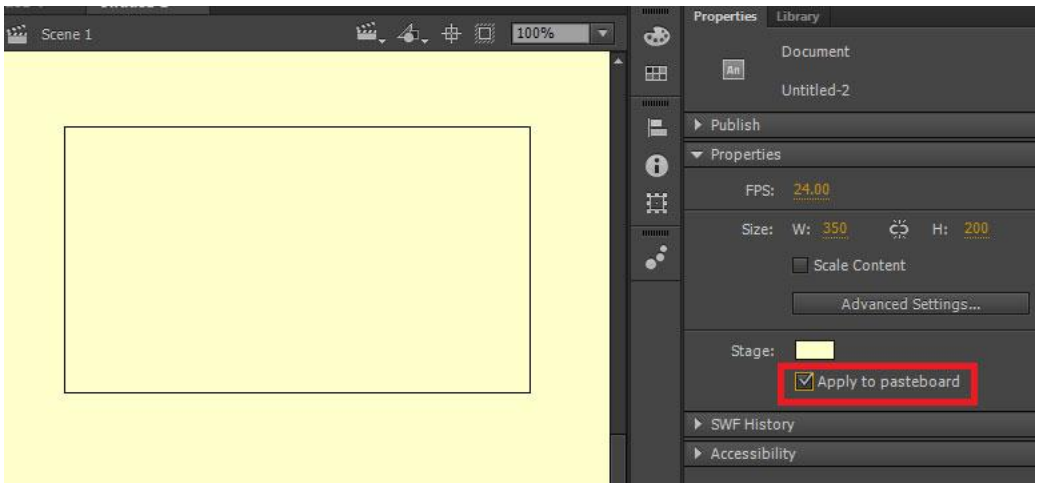
Pasteboard color

Earlier, the Pasteboard colors were fixed based on the User Interface theme. From January 2017 release onwards, you can have the pasteboard same as that of Stage color. This feature enables you to work with an infinite canvas.

Note:

Only stage content is visible in the final output.





Move the view of the Stage

When the Stage is magnified, you may not be able to see all the stage. To change the view without having to change the magnification, use the Hand tool to move the Stage.

Note:

You can also use multi-touch gestures in compatible devices.

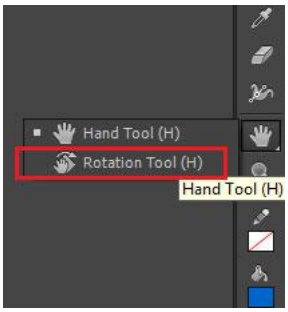
- In the Tools panel, select the Hand tool and drag the Stage. To temporarily switch between another tool and the Hand tool, hold down the Spacebar and click the tool in the Tools panel.

Rotate the Stage

Animate CC introduces a new Rotation tool that lets you rotate the Stage view temporarily, to help you draw and paint at a particular angle, without permanently rotating the actual objects on stage as the Free Transform tool does. You can quickly rotate the Stage, regardless of which tool you have currently selected, by holding down the **Shift** and **Space** keys together, and then dragging your mouse to rotate the view.

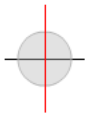
To rotate the stage using the Rotation Tool

1 Choose the Rotation tool (H), that is grouped together with the Hand tool (H) or, press **Shift** and **Space** keys together to switch to Rotation Tool temporarily while working with any other tool, such as Brush.



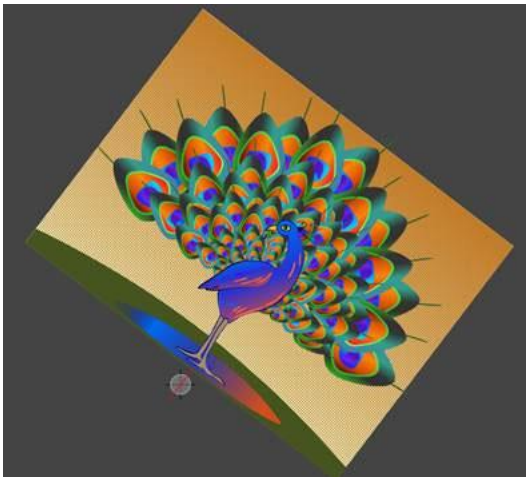
Rotation Tool on the toolbar

2 Once the Rotation Tool is selected, Pivot point for rotation appears on screen, indicated by a crosshair. You can change the position of the Pivot point by clicking at the desired position.



The crosshair pivot point

3 Once the Pivot point is set, you can drag the mouse to rotate the stage view around the pivot point.



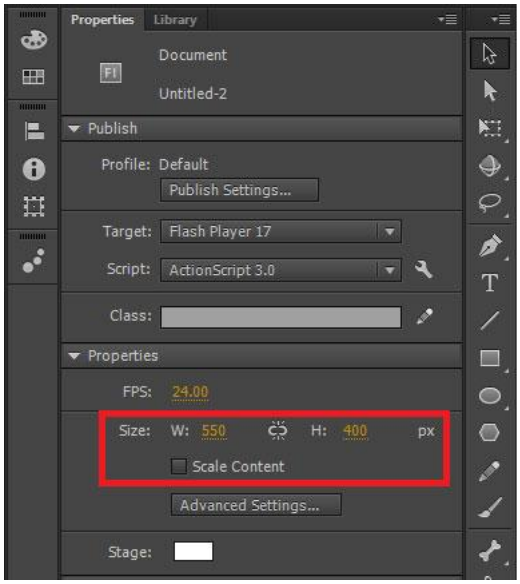
Rotated stage

4 Using the stage Rotation Tool, drag to rotate the stage area temporarily. The current rotation angle is indicated by the red line on the Pivot crosshair.

5 To reset the stage to its default view, click the Center Stage button .

Scale content to fit the stage size

The **Scale Content** option in PI allows you to scale the contents on your stage according to the stage size. When stage is resized with this option selected, content resizes in the same proportion as the stage.



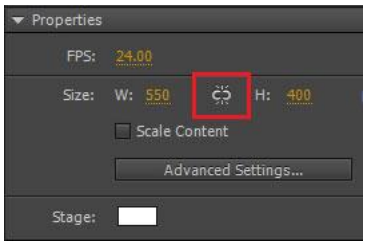
Scale content option in PI

Scale stage size

The Scale Content option in advanced settings is now directly accessible from PI. When stage is resized with this option selected, content resizes in the same proportion as the stage.

PI and Document Settings dialog box contain a Link option to increase the stage dimensions proportionately. By default, the height and width properties of the stage are unlinked. If you click the Link button and enable linking, as you modify the values of either height or width properties, the value of the other property is changed proportionately.

If you select the Scale Content option, the stage dimensions are automatically linked and disabled. This is because content scaling makes sense if stage dimensions are modified proportionately.



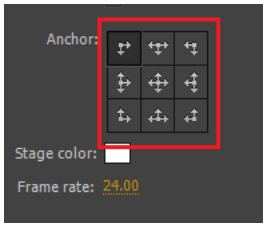
Link button to proportionately scale stage size

Set Canvas Transperancy

You can set the canvas to the transperant mode by selecting the alpha color ranges in percentage in your color swatches. To do so, select canvas>Properties> Stage> Alpha %.

Scale stage based on selected anchor

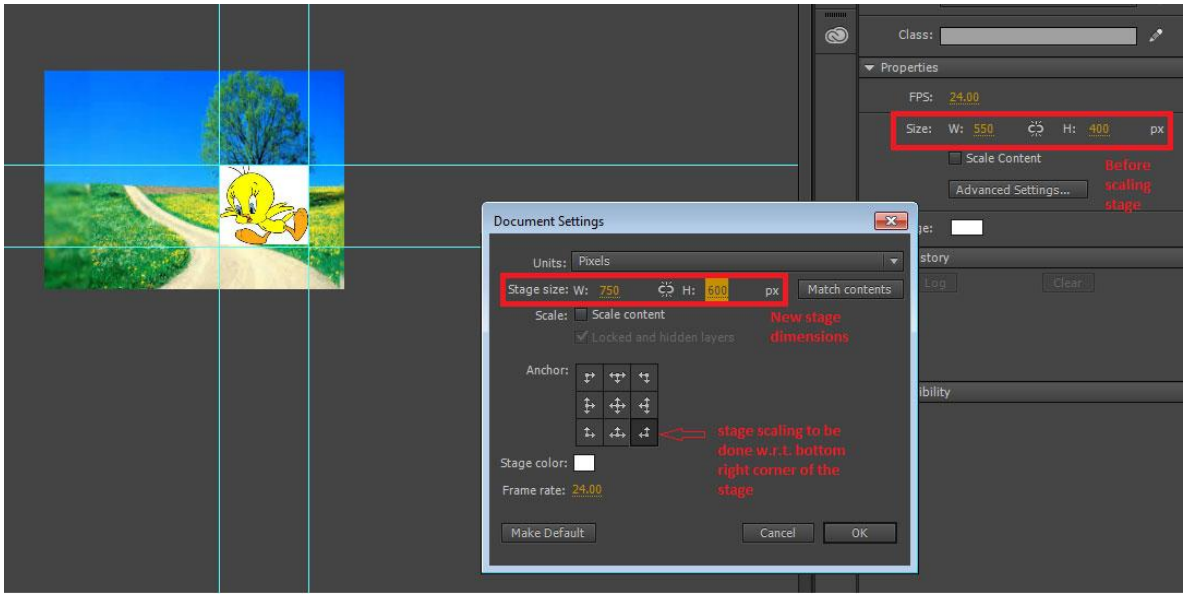
You can select an anchor point in Document Settings, specify the height and width, and scale the stage to the dimensions. When 'Scale Content' is disabled, the stage expands in the directions according to the selected anchor point, as detailed in the following images.



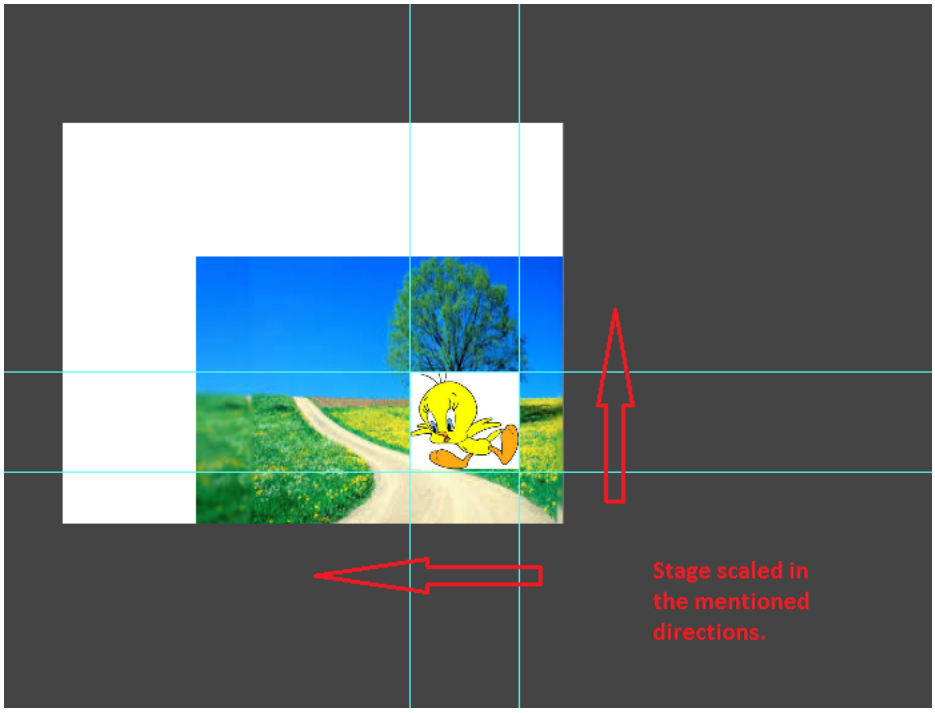
Anchor points based on which you can scale the stage

Stage scaling: an example

In the following example, the stage measuring 550x400 is proportionately scaled to 750x600 from the anchor point at the bottom right corner of the stage:



Setting stage scaling with the bottom right corner as anchor point



Stage scaled in the set direction from the anchor point at the bottom right corner

Note:

You can also use multi-touch gestures in compatible devices.

Use rulers

When rulers show, they appear along the top and left sides of the document. You can change the unit of measure used in the rulers from the default of pixels to another unit. When you move an element on the Stage with the rulers displayed, lines indicating the element's dimensions appear on the rulers.

- To show or hide rulers, select View > Rulers.
- To specify the rulers' unit of measure for a document, select Modify > Document, and select a unit from the Ruler Units menu.

Use guides

When rulers show (View > Rulers), you can drag horizontal and vertical guides from the rulers onto the Stage.

When you create nested timelines, draggable guides appear on the Stage only when the Timeline in which they were created is active.

To create custom guides or irregular guides, use guide layers.

- To display or hide the drawing guides, select View > Guides > Show Guides.

  Note: If the grid is visible and Snap to Grid is turned on when you create guides, guides snap to the grid.

- To turn snapping to guides on or off, select View > Snapping > Snap to Guides.

Note: Snapping to guides takes precedence over snapping to the grid in places where guides fall between grid lines.

- To move a guide, click anywhere on the ruler with the Selecting objects in Animate CCtool and drag the guide to the desired place on the Stage.
- To remove a guide, use the Selection tool with guides unlocked to drag the guide to the horizontal or vertical ruler.
- To lock guides, select View > Guides > Lock Guides or use the Lock Guides option in the Edit Guides (View > Guides > Edit Guides) dialog box.
- To clear guides, select View > Guides > Clear Guides. If you are in document-editing mode, all guides in the document are cleared. If you are in symbol-editing mode, only guides used in symbols are cleared.

Set guide preferences

1 Select View > Guides > Edit Guides and do any of the following:
   - To set Color, click the triangle in the color box and select a guide line color from the palette. The default guide color is green.
   - To display or hide guides, select or deselect Show Guides.
   - To turn snapping to guides on or off, select or deselect Snap To Guides.
   - Select or deselect Lock Guides.
   - To set Snap Accuracy, select an option from the pop-up menu.
   - To remove all guides, click Clear All. Clear All removes all guides from the current scene.
   - To save the current settings as the default, click Save Default.
2 Click OK.

Use the grid

The grid appears in a document as a set of lines behind the artwork in all scenes.

Display or hide the drawing grid

? Do one of the following:
   - Select View > Grid > Show Grid.
   - Press Control+" (quote) (Windows) or Command+" (quote) (Macintosh).

Turn snapping to grid lines on or off

? Select View > Snapping > Snap to Grid.

Set grid preferences

1 Select View > Grid > Edit Grid and select from the options.
2 To save the current settings as the default, click Save Default.

About the main toolbar and edit bar

The menu bar at the top of the application window contains menus with commands for controlling functionality.

The edit bar, at the top of the Stage, contains controls and information for editing scenes and symbols, and for changing the magnification level of the Stage.

Use the Tools panel

The tools in the Tools panel let you draw, paint, select, and modify artwork, as well as change the view of the Stage. The Tools panel is divided into four sections:

- The tools area contains drawing, painting, and selection tools.
- The view area contains tools for zooming and panning in the application window.
- The colors area contains modifiers for stroke and fill colors.
- The options area contains modifiers for the currently selected tool. Modifiers affect the tool's painting or editing operations.

To show or hide the Tools panel, select Window > Tools.

Select tools

? Do one of the following:

- Click the tool in the Tools panel. Depending on the tool you select, a set of modifiers might appear in the options area at the bottom of the Tools panel.
- Press the tool's keyboard shortcut. To view the keyboard shortcuts, select Edit > Keyboard Shortcuts (Windows) or Animate > Keyboard Shortcuts (Macintosh). On the Macintosh, you might need to move the mouse to see the new pointer appear.
- To select a tool located in the pop-up menu for a visible tool such as the Rectangle tool, press the icon of the visible tool and select another tool from the pop-up menu.

Pressure and Tilt in Paint Brush

Animate CC provides Pressure and Tilt support for strokes drawn using the Paint brush tool. You can draw art and pattern strokes with variable width, dependent on the applied pressure or tilt on the stylus. For further refinement, use the Width tool to adjust the width points.

For more information, see Working with PaintBrush.

Note:

Pressure and tilt icons in the tool bar are displayed only if you have connected a Wacom pressure-sensitive tablet to your computer.

Use context menus

Context menus contain commands relevant to the current selection. For example, when you select a frame in the Timeline window, the context menu contains commands for creating, deleting, and modifying frames and keyframes. Context menus exist for many items and controls in many locations, including on the Stage, in the Timeline, in the Library panel, and in the Actions panel.

? Right-click (Windows) or Control-click (Macintosh) an item.

Animate workflow and workspace

What is Animate CC?

What is Animate CC?

General Animate workflow

To build a Animate CC application, you typically perform the following basic steps:

Plan the application.

Decide which basic tasks the application will perform.

Add media elements.

Create and import media elements, such as images, video, sound, and text.

Arrange the elements.

Arrange the media elements on the Stage and in the Timeline to define when and how they appear in your application.

Apply special effects.

Apply graphic filters (such as blurs, glows, and bevels), blends, and other special effects as you see fit.

Use ActionScript to control behavior.

Write ActionScript® code to control how the media elements behave, including how the elements respond to user interactions.

Test and publish your application.

Test your FLA file (Control > Test Movie) to verify that your application is working as you intended and find and fix any bugs you encounter. You should test the application throughout the creation process. You can test your file in Animate and the AIR Debug Launchers.

Publish your FLA file (File > Publish) as a SWF file that can be displayed in a web page and played back with Flash® Player.

Depending on your project and your working style, you might use these steps in a different order.

Workspace overview

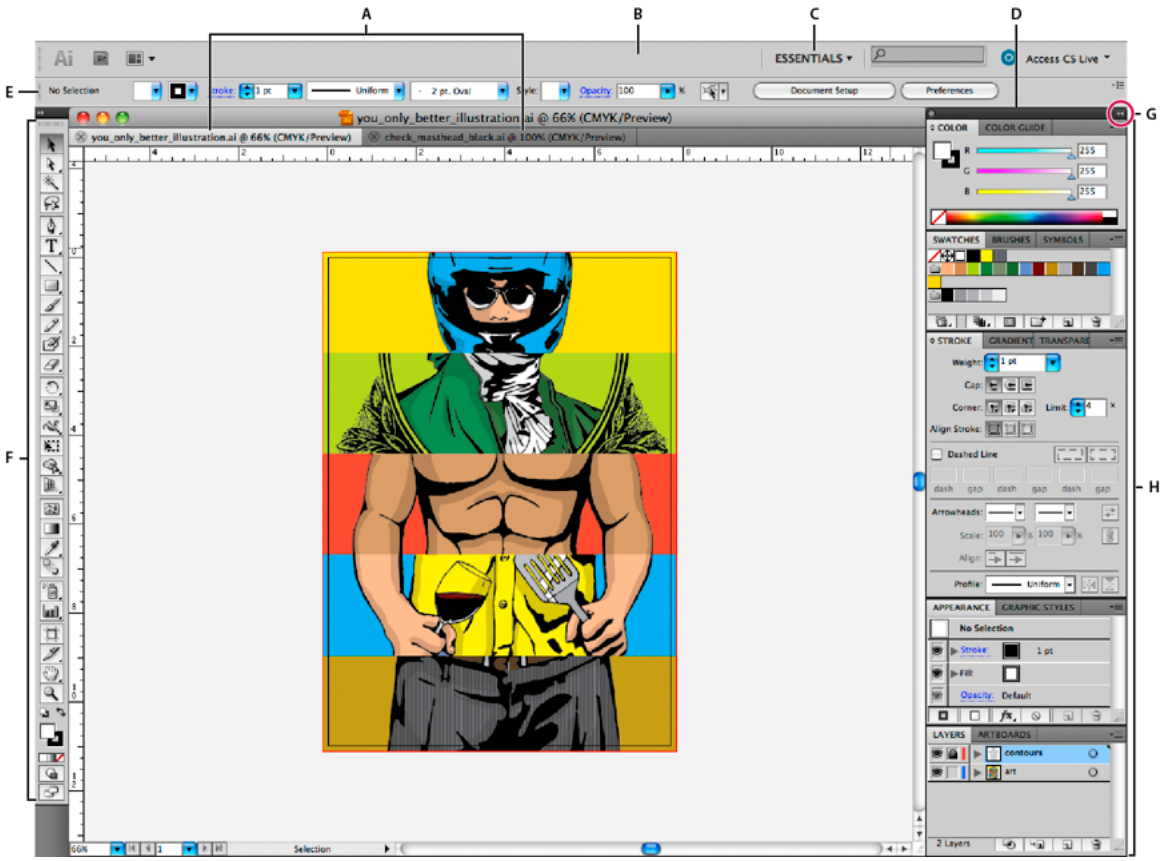
You create and manipulate your documents and files using various elements, such as panels, bars, and windows. Any arrangement of these elements is called a workspace. The workspaces of the different applications in Adobe® **Creative Suite**® 5 share the same appearance so that you can move between the applications easily. You can also adapt each application to the way you work by selecting from several preset workspaces or by creating one of your own.

Although the default workspace layout varies in different products, you manipulate the elements much the same way in all of them.

- The Application bar across the top contains a workspace switcher, menus (Windows only), and other application controls. On the Mac for certain products, you can show or hide it using the Window menu.
- The Tools panel contains tools for creating and editing images, artwork, page elements, and so on. Related tools are grouped.

- The Control panel displays options for the currently selected tool. In Illustrator, the Control panel displays options for the currently selected object. (In Adobe Photoshop® this is known as the Options bar. In Adobe Animate®, Adobe Dreamweaver®, and Adobe Fireworks® this is known as the Property Inspector and includes properties of the currently selected element.)
- The Document window displays the file you're working on. Document windows can be tabbed and, in certain cases, grouped and docked.
- Panels help you monitor and modify your work. Examples include the Timeline in Animate, the Brush panel in Illustrator, the Layers panel in Adobe Photoshop®, and the CSS Styles panel in Dreamweaver. Panels can be grouped, stacked, or docked.
- The Application frame groups all the workspace elements in a single, integrated window that lets you treat the application as a single unit. When you move or resize the Application frame or any of its elements, all the elements within it respond to each other so none overlap. Panels don't disappear when you switch applications or when you accidentally click out of the application. If you work with two or more applications, you can position each application side by side on the screen or on multiple monitors.

  If you are using a Mac and prefer the traditional, free-form user interface, you can turn off the Application frame. In Adobe Illustrator®, for example, select Window > Application Frame to toggle it on or off. (In Animate, the Application frame is on permanently for Mac, and Dreamweaver for Mac does not use an Application frame.)



Default Illustrator workspace
***A** Tabbed Document windows **B** Application bar **C** Workspace switcher **D** Panel title bar **E** Control panel **F** Tools panel **G** Collapse To Icons button **H** Four panel groups in vertical dock*

Hide or show all panels

- (Illustrator, Adobe InCopy®, Adobe InDesign®, Photoshop, Fireworks)To hide or show all panels, including the Tools panel and Control panel, press Tab.
- (Illustrator, InCopy, InDesign, Photoshop) To hide or show all panels except the Tools panel and Control panel, press Shift+Tab.

  Tip: You can temporarily display hidden panels if Auto-Show Hidden Panels is selected in Interface preferences. It's always on in Illustrator. Move the pointer to the edge of the application window (Windows®) or to the edge of the monitor (Mac OS®) and hover over the strip that appears.
- (Animate, Dreamweaver, Fireworks) To hide or show all panels, press F4.

Display panel options

? Click the panel menu icon in the upper-right corner of the panel.

***Tip**: You can open a panel menu even when the panel is minimized.*

***Tip**: In Photoshop, you can change the font size of the text in panels and tool tips. In the Interface preferences, choose a size from the UI Font Size menu.*

(Illustrator) Adjust panel brightness

? In User Interface preferences, move the Brightness slider. This control affects all panels, including the Control panel.

Reconfigure the Tools panel

You can display the tools in the Tools panel in a single column, or side by side in two columns. (This feature is not available in the Tools panel in Fireworks and Animate.)

In InDesign and InCopy, you also can switch from single-column to double-column (or single-row) display by setting an option in Interface preferences.

? Click the double arrow at the top of the Tools panel.

Manage windows and panels

You can create a custom workspace by moving and manipulating Document windows and panels. You can also save workspaces and switch among them. For Fireworks, renaming custom workspaces can lead to unexpected behavior.

Note:

The following examples use Photoshop for demonstration purposes. The workspace behaves the same in all the products.

Rearrange, dock, or float document windows

When you open more than one file, the Document windows are tabbed.

- To rearrange the order of tabbed Document windows, drag a window's tab to a new location in the group.
- To undock (float or untab) a Document window from a group of windows, drag the window's tab out of the group.

  ***note**: In Photoshop you can also choose Window > Arrange > Float in Window to float a single Document window, or Window > Arrange > Float All In Windows to float all of the Document windows at once. See tech note kb405298 for more information.*

***note**: Dreamweaver does not support docking and undocking Document windows. Use the Document window's Minimize button to create floating windows (Windows), or choose Window > Tile Vertically to create side-by-side Document windows. Search "Tile Vertically" in Dreamweaver Help for more information on this topic. The workflow is slightly different for Macintosh users.*

- To dock a Document window to a separate group of Document windows, drag the window into the group.
- To create groups of stacked or tiled documents, drag the window to one of the drop zones along the top, bottom, or sides of another window. You can also select a layout for the group by using the Layout button on the Application bar.

  ***note**: Some products do not support this functionality. However, your product may have Cascade and Tile commands in the Window menu to help you lay out your documents.*
- To switch to another document in a tabbed group when dragging a selection, drag the selection over the document's tab for a moment.

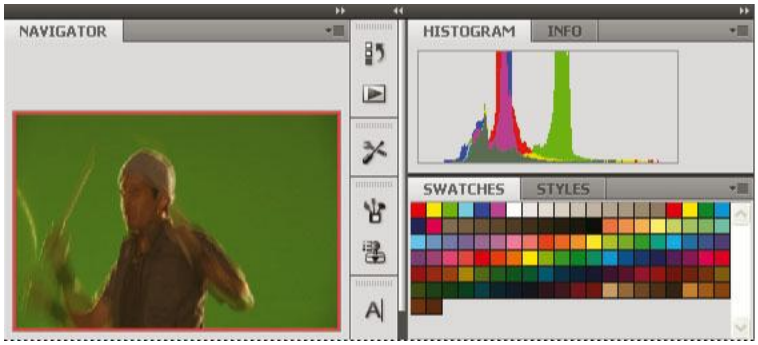
  ***note**: Some products do not support this functionality.*

Dock and undock panels

A *dock* is a collection of panels or panel groups displayed together, generally in a vertical orientation. You dock and undock panels by moving them into and out of a dock.

- To dock a panel, drag it by its tab into the dock, at the top, bottom, or in between other panels.
- To dock a panel group, drag it by its title bar (the solid empty bar above the tabs) into the dock.
- To remove a panel or panel group, drag it out of the dock by its tab or title bar. You can drag it into another dock or make it free-floating.

Navigator panel being dragged out to new dock, indicated by blue vertical highlight



Navigator panel now in its own dock

You can prevent panels from filling all the space in a dock. Drag the bottom edge of the dock up so it no longer meets the edge of the workspace.

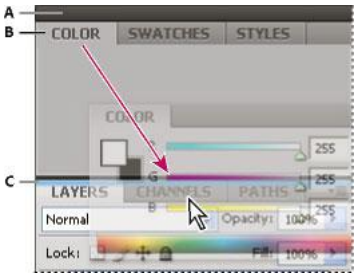
Move panels

As you move panels, you see blue highlighted *drop zones*, areas where you can move the panel. For example, you can move a panel up or down in a dock by dragging it to the narrow blue drop zone above or below another panel. If you drag to an area that is not a drop zone, the panel floats freely in the workspace.

Note:

The position of the mouse (rather than the position of the panel), activates the drop zone, so if you can't see the drop zone, try dragging the mouse to the place where the drop zone should be.

- To move a panel, drag it by its tab.
- To move a panel group, drag the title bar.



Narrow blue drop zone indicates Color panel will be docked on its own above the Layers panel group.
***A** Title bar **B** Tab **C** Drop zone*

Press Ctrl (Windows) or Command (Mac OS) while moving a panel to prevent it from docking. Press Esc while moving the panel to cancel the operation.

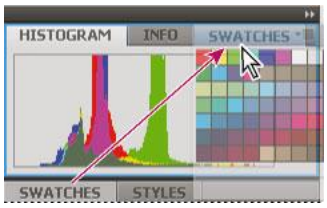
Add and remove panels

If you remove all panels from a dock, the dock disappears. You can create a dock by moving panels to the right edge of the workspace until a drop zone appears.

- To remove a panel, right-click (Windows) or Control-click (Mac) its tab and then select Close, or deselect it from the Window menu.
- To add a panel, select it from the Window menu and dock it wherever you want.

Manipulate panel groups

- To move a panel into a group, drag the panel's tab to the highlighted drop zone in the group.

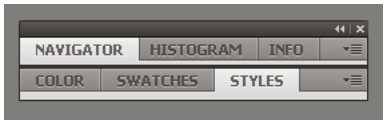


a panel to a panel group

- To rearrange panels in a group, drag a panel's tab to a new location in the group.
- To remove a panel from a group so that it floats freely, drag the panel by its tab outside the group.
- To move a group, drag the title bar (the area above the tabs).

Stack floating panels

When you drag a panel out of its dock but not into a drop zone, the panel floats freely. The floating panel allows you to position it anywhere in the workspace. You can stack floating panels or panel groups so that they move as a unit when you drag the topmost title bar.



Free-floating stacked panels

- To stack floating panels, drag a panel by its tab to the drop zone at the bottom of another panel.
- To change the stacking order, drag a panel up or down by its tab.

  ***note**: Be sure to release the tab over the narrow drop zone between panels, rather than the broad drop zone in a title bar.*
- To remove a panel or panel group from the stack, so that it floats by itself, drag it out by its tab or title bar.

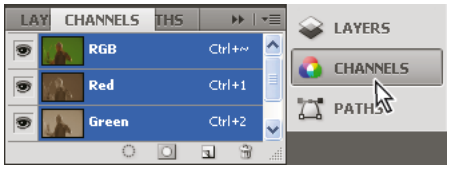
Resize panels

- To minimize or maximize a panel, panel group, or stack of panels, double-click a tab. You can also double-click the tab area (the empty space next to the tabs).
- To resize a panel, drag any side of the panel. Some panels, such as the Color panel in Photoshop, cannot be resized by dragging.

Collapse and expand panel icons

You can collapse panels to icons to reduce clutter on the workspace. In some cases, panels are collapsed to icons in the default workspace.

Panels collapsed to icons



Panels expanded from icons

- To collapse or expand all panel icons in a column, click the double arrow at the top of the dock.
- To expand a single panel icon, click it.
- To resize panel icons so that you see only the icons (and not the labels), adjust the width of the dock until the text disappears. To display the icon text again, make the dock wider.
- To collapse an expanded panel back to its icon, click its tab, its icon, or the double arrow in the panel's title bar.

  ***Tip**: In some products, if you select Auto-Collapse Icon Panels from the Interface or User Interface Options preferences, an expanded panel icon collapses automatically when you click away from it.*

- To add a floating panel or panel group to an icon dock, drag it in by its tab or title bar. (Panels are automatically collapsed to icons when added to an icon dock.)
- To move a panel icon (or panel icon group), drag the icon. You can drag panel icons up and down in the dock, into other docks (where they appear in the panel style of that dock), or outside the dock (where they appear as floating icons).

Save and switch workspaces

By saving the current size and position of panels as a named workspace, you can restore that workspace even if you move or close a panel. The names of saved workspaces appear in the workspace switcher in the Application bar.

Save a custom workspace

1 With the workspace in the configuration you want to save, do one of the following:

- (Illustrator) Choose Window > Workspace > Save Workspace.
- (Photoshop, InDesign, InCopy) Choose Window > Workspace > New Workspace.
- (Dreamweaver) Choose Window > Workspace Layout > New Workspace.
- (Animate) Choose New Workspace from the workspace switcher in the Application bar.
- (Fireworks) Choose Save Current from the workspace switcher in the Application bar.

2 Type a name for the workspace.

3 (Photoshop, InDesign) Under Capture, select one or more options:

Panel Locations Saves the current panel locations (InDesign only).

Keyboard shortcuts Saves the current set of keyboard shortcuts (Photoshop only).

Menus or Menu Customization Saves the current set of menus.

Display or switch workspaces

? Select a workspace from the workspace switcher in the Application bar.

In Photoshop, you can assign keyboard shortcuts to each workspace to navigate among them quickly.

Delete a custom workspace

- Select Manage Workspaces from the workspace switcher in the Application bar, select the workspace, and then click Delete. (The option is not available in Fireworks.)
- (Photoshop, InDesign, InCopy) Select **Delete Workspace** from the workspace switcher.
- (Illustrator) Choose Window > Workspace > Manage Workspaces, select the workspace, and then click the Delete icon.
- (Photoshop, InDesign) Choose Window > Workspace >**Delete Workspace**, select the workspace, and then click Delete.

Restore the default workspace

1 Select the Default or Essentials workspace from the workspace switcher in the application bar.

Note:

In Dreamweaver, Designer is the default workspace.

2 (Photoshop, InDesign, InCopy) Select Window > Workspace > Reset *[Workspace Name]*.

(Photoshop) Restore a saved workspace arrangement

In Photoshop, workspaces automatically appear as you last arranged them, but you can restore the original, saved arrangement of panels.

- To restore an individual workspace, choose Window > Workspace > Reset *Workspace Name*.
- To restore all the workspaces installed with Photoshop, click Restore Default Workspaces in the Interface preferences.

To rearrange the order of workspaces in the application bar, drag them.

Using Typekit Web fonts in HTML5 Canvas documents

Working with Typekit Web fonts

Adobe Typekit web fonts are now available for HTML5 Canvas documents in Adobe Animate CC.

With the integration of Typekit with Animate CC, thousands of premium web fonts from quality foundries are instantly available to you in your HTML5 Canvas documents.

You can try a limited selection of fonts from the Typekit library with any level of Creative Cloud plan, and if you've subscribed to a paid plan, you'll have access to the full library with thousands of fonts.

For more information on subscription plans for Typekit, see Web Font Hosting Plans from Typekit.

Unlike self-hosted web fonts, Typekit hosts the fonts that you decide to use in your hosted content. If you select fonts from the Typekit library and then publish your document on the web, Typekit automatically hosts those fonts and connects your Typekit account to your content on the web.

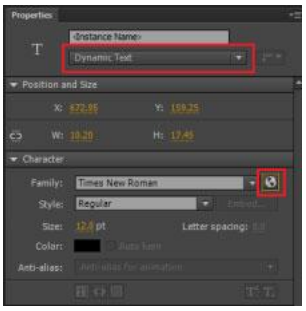
The Typekit library is available to you with your Creative Cloud subscription. For more information, see https://typekit.com/.

You can also buy new Typekit fonts from the Typekit marketplace. Re-launch Animate CC to view the purchased fonts in the All Fonts tab of the Typekit font screen.

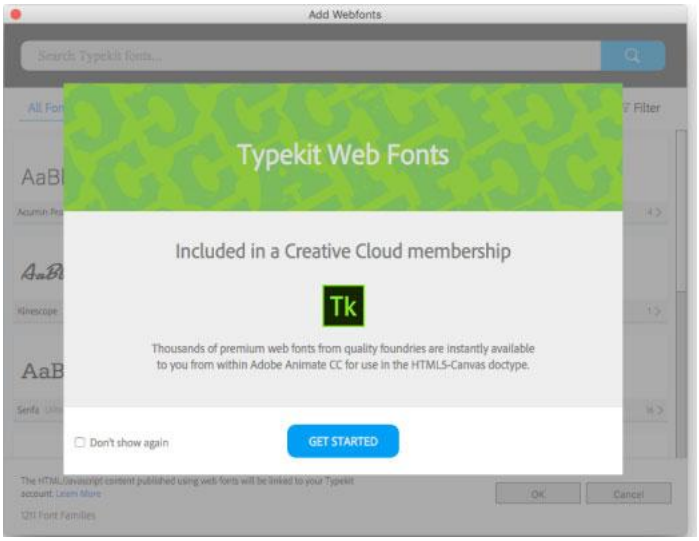
Using Typekit Web fonts in an HTML5 Canvas document

1 Open an HTML5 Canvas document and select the Text tool in the Tools panel.

2 In the Properties panel, select **Dynamic Text** and click the Add Web fonts button next to the **Font Family** dropdown box.



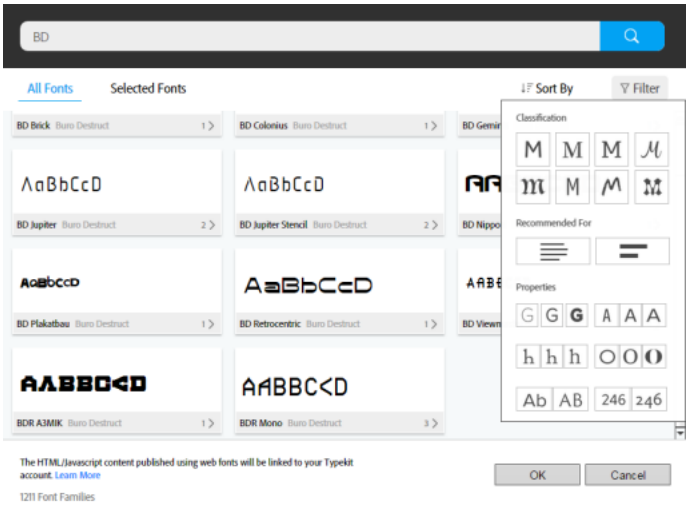
3 In the **Add Web fonts** window that appears, click **Get Started**.


Add Webfonts
Typekit Web Fonts
Included in a Creative Cloud membership
Tk
Thousands of premium web fonts from quality foundries are instantly available to you from within Adobe Animate CC for use in the HTML5-Canvas doctype.
Don't show again
GET STARTED
OK
Cancel

4 The Web fonts dialog lists all the Typekit web fonts that are available to your Creative Cloud subscription plan. You can now select the font that best suits your design needs by browsing through fonts, searching for specific fonts, or filtering by font properties.

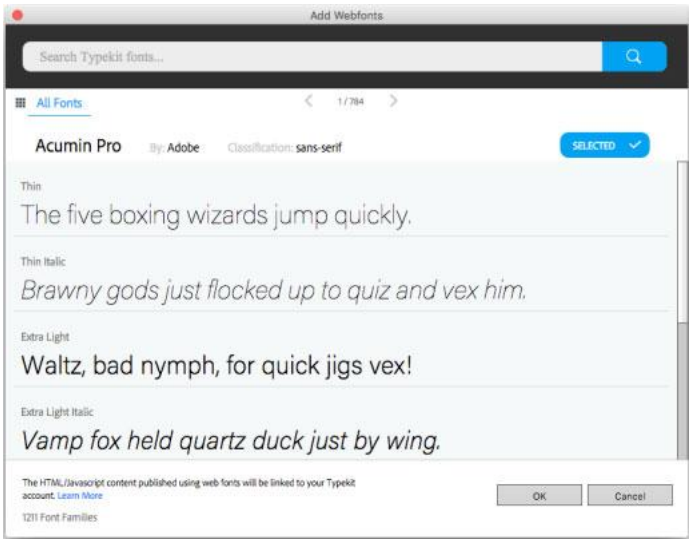
Click Filter to take advantage of any of the following Filters:

- Classification: You can filter Typekit fonts based on their classifications, such as Serif, Sans Serif and Script.
- Recommended for: Filter fonts based on Typekit's recommendations for paragraph or headings.
- Properties: Filter based on properties such as weight, width, and height.

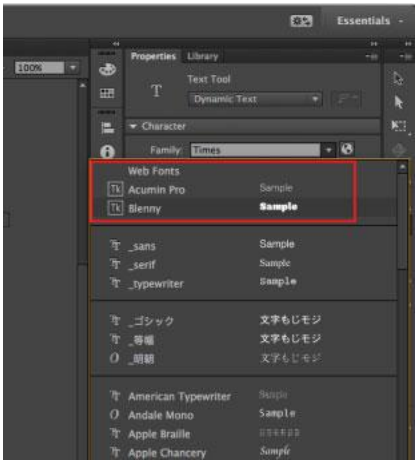


5 Once you find a font that you want to use, simply click on it. A check mark appears indicating the font is selected. You can choose multiple fonts to add at once. The Selected Fonts tab displays all the fonts that you've selected.

You can click the font preview footer to see all the variations, such as thin, bold, and italic.

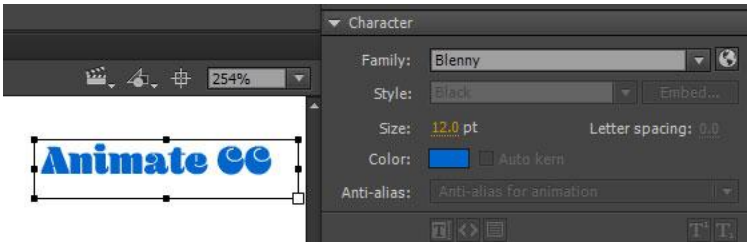


Click **OK** to add the selected fonts.



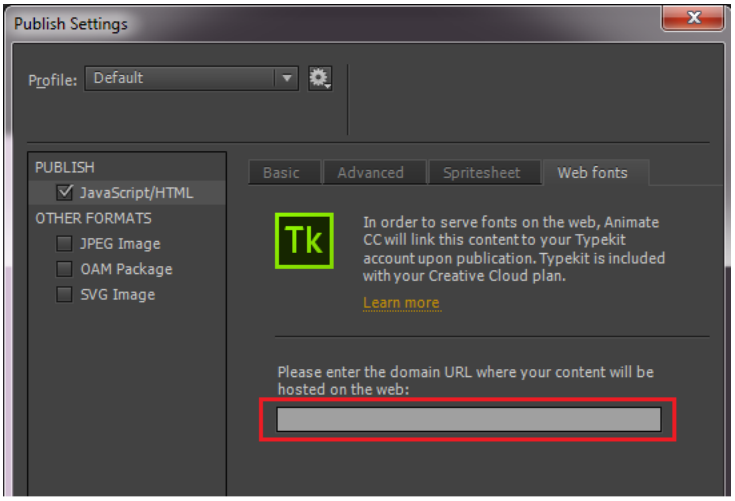
Selected Web font in the Family menu

6 Select the added Web font to use it in your HTML5 Canvas document.



Using the selected font in the document

7 Before publishing your content on the Web, open **Publish Settings**, click the **Web fonts** tab, and specify the URL of the page on which your HTML5 content will be hosted. For example, www.adobe.com. You can also specify multiple URLs separated by comma.


Publish Settings
Profile: Default
PUBLISH
JavaScript/HTML
OTHER FORMATS
JPEG Image
OAM Package
SVG Image
Basic
Advanced
Spritesheet
Web fonts
Tk
In order to serve fonts on the web, Animate CC will link this content to your Typekit account upon publication. Typekit is included with your Creative Cloud plan.
Learn more
Please enter the domain URL where your content will be hosted on the web:

Web font URL box in Publish Settings

Note:

- The web fonts from Typekit will only load on domain names that are listed in the publish settings. If the fonts don't work or you see a 403 error from Typekit on your webpage, make sure you have included the website domain in that list and republish the project.
- "Output generated via the TestMovie option is meant for preview only. Use the File > Publish option to generate the output for final deployment.

See also

Using Google fonts in HTML5 Canvas documents

Timelines and ActionScript

With ActionScript®, you can control the Timeline at runtime. Using ActionScript allows you to create interaction and other capabilities in your FLA files that is not possible with the Timeline alone.

With ActionScript®, you can control the Timeline at runtime. Using ActionScript allows you to create interaction and other capabilities in your FLA files that is not possible with the Timeline alone.

See the discussion of timelines and ActionScript in web Help to learn about controlling the Timeline with ActionScript.

Absolute paths

An absolute path starts with the name of the level into which the document is loaded and continues through the display list until it reaches the target instance. You can also use the alias *_root* to refer to the topmost Timeline of the current level. For example, an action in the movie clip *california* that refers to the movie clip *oregon* could use the absolute path *_root.westCoast.oregon*.

The first document to open in Flash Player is loaded at level 0. You must assign each additional loaded document a level number. When you use an absolute reference in ActionScript to reference a loaded document, use the form *_levelX*, where *X* is the level number into which the document is loaded. For example, the first document that opens in Flash Player is called *_level0*; a document loaded into level 3 is called *_level3*.

To communicate between documents on different levels, you must use the level name in the target path. The following example shows how the *portland* instance would address the *atlanta* instance located in a movie clip called *georgia* (*georgia* is at the same level as *oregon*):

```
_level5.georgia.atlanta
```

You can use the *_root* alias to refer to the main Timeline of the current level. For the main Timeline, the *_root* alias stands for *_level0* when targeted by a movie clip also on *_level0*. For a document loaded into *_level5*, *_root* is equal to *_level5* when targeted by a movie clip also on level 5. For example, if the movie clips *southcarolina* and *florida* are both loaded into the same level, an action called from the instance *southcarolina* could use the following absolute path to target the instance *florida*:

```
_root.eastCoast.florida
```

Relative paths

A relative path depends on the relationship between the controlling Timeline and the target Timeline. Relative paths can address targets only within their own level of Flash Player. For example, you can't use a relative path in an action on *_level0* that targets a Timeline on *_level5*.

In a relative path, use the keyword *this* to refer to the current Timeline in the current level; use the *_parent* alias to indicate the parent Timeline of the current Timeline. You can use the *_parent* alias repeatedly to go up one level in the movie clip hierarchy within the same level of Flash Player. For example, *_parent._parent* controls a movie clip up two levels in the hierarchy. The topmost Timeline at any level in Flash Player is the only Timeline with a *_parent* value that is undefined.

An action in the Timeline of the instance *charleston*, located one level below *southcarolina*, could use the following target path to target the instance *southcarolina*:

```
_parent
```

To target the instance *eastCoast* (one level up) from an action in *charleston*, you could use the following relative path:

```
_parent._parent
```

To target the instance *atlanta* from an action in the Timeline of *charleston*, you could use the following relative path:

```
_parent._parent.georgia.atlanta
```

Relative paths are useful for reusing scripts. For example, you could attach the following script to a movie clip that magnifies its parent by 150%:

```
onClipEvent (load) {    _parent._xscale
= 150;    _parent._yscale = 150;
}
```

You can reuse this script by attaching it to any movie clip instance.

Note:

Flash Lite 1.0 and 1.1 support attaching scripts only to buttons. Attaching scripts to movie clips is not supported.

Whether you use an absolute or a relative path, you identify a variable in a Timeline or a property of an object with a dot (.) followed by the name of the variable or property. For example, the following statement sets the variable *name* in the instance *form* to the value *"Gilbert"*:

```
_root.form.name = "Gilbert";
```

Using absolute and relative target paths

You can use ActionScript to send messages from one timeline to another. The timeline that contains the action is called the *controlling timeline*, and the timeline that receives the action is called the *target timeline*. For example, there could be an action on the last frame of one timeline that tells another timeline to play. To refer to a target timeline, you must use a target path, which indicates the location of a movie clip in the display list.

The following example shows the hierarchy of a document named westCoast on level 0, which contains three movie clips: *california*, *oregon*, and *washington*. Each of these movie clips in turn contains two movie clips.

```
_level0
       westCoast
               california
                       sanfrancisco
                       bakersfield
               oregon
                       portland
                       ashland
               washington
                       olympia
                       ellensburg
```

As on a web server, each timeline in Animate can be addressed in two ways: with an absolute path or with a relative path. The absolute path of an instance is always a full path from a level name, regardless of which timeline calls the action; for example, the absolute path to the instance *california* is *_level0.westCoast.california*. A relative path is different when called from different locations; for example, the relative path to *california* from *sanfrancisco* is *_parent*, but from *portland*, it's *_parent._parent.california*.

Specify target paths

To control a movie clip, loaded SWF file, or button, you must specify a target path. You can specify it manually, or by using the Insert Target Path dialog box, or by creating an expression that evaluates to a target path. To specify a target path for a movie clip or button, you must assign an instance name to the movie clip or button. A loaded document doesn't require an instance name, because you use its level number as an instance name (for example, *_level5*).

Assign an instance name to a movie clip or button

1. Select a movie clip or button on the Stage.
2. Enter an instance name in the Property inspector.

Specify a target path using the Insert Target Path dialog box

1. Select the movie clip, frame, or button instance to which you want to assign the action.

   This becomes the controlling Timeline.

2 In the Actions panel (Window > Actions), go to the Actions toolbox on the left, and select an action or method that requires a target path.

3 Click the parameter box or location in the script where you want to insert the target path.

4 Click the Insert Target Path button above the Script pane.

5 Select Absolute or Relative for the target path mode.

6 Select a movie clip in the Insert Target Path display list, and click OK.

Specify a target path manually

1 Select the movie clip, frame, or button instance to which you want to assign the action.

This becomes the controlling Timeline.

2 In the Actions panel (Window > Actions), go to the Actions toolbox on the left, and select an action or method that requires a target path.

3 Click the parameter box or location in the script where you want to insert the target path.

4 Enter an absolute or relative target path in the Actions panel.

Use an expression as a target path

1 Select the movie clip, frame, or button instance to which you want to assign the action.

This becomes the controlling Timeline.

2 In the Actions panel (Window > Actions), go to the Actions toolbox on the left, and select an action or method that requires a target path.

3 Do one of the following:

- Enter an expression that evaluates to a target path in a parameter box.
- Click to place the insertion point in the script. Then, in the Functions category of the Actions toolbox, double-click the *targetPath* function. The *targetPath* function converts a reference to a movie clip into a string.
- Click to place the insertion point in the script. Then, in the Functions category of the Actions toolbox, select the *eval* function. The *eval* function converts a string to a movie clip reference that can be used to call methods such as *play*.

  The following script assigns the value 1 to the variable *i*. It then uses the *eval* function to create a reference to a movie clip instance and assigns it to the variable *x*. The variable *x* is now a reference to a movie clip instance and can call the MovieClip object methods.

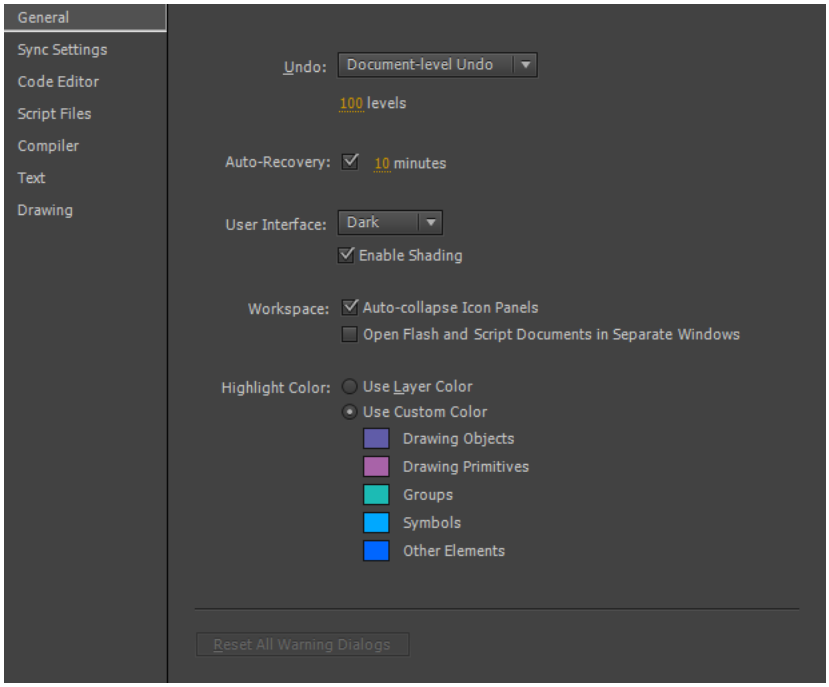
```
i = 1; x = eval("mc"+i); x.play(); // this is equivalent to mc1.play();
```

  You can also use the *eval* function to call methods directly, as shown in the following example:

```
eval("mc" + i).play();
```

Set preferences

You can set preferences for general application operations, editing operations, code and compiler operations, sync settings, and drawing and text options.



The General category in the Preferences dialog box.

Set preferences

1 Select Edit > Preferences (Windows) or Animate > Preferences (Macintosh).

2 Make a selection in the Category list and select from the respective options.

Set General preferences

On Launch Specify which document opens when you start the application.

Document- or Object-level undo Document-level undo maintains a single list of all your actions for the entire Animate document. Object-level undo maintains separate lists of your actions for each object in your document. Object-level lets you undo an action on one object without having to also undo actions on other objects that might have been modified more recently than the target object.

Undo levels To set the number of undo or redo levels, enter a value from 2 to 300. Undo levels require memory; the more undo levels you use, the more system memory is consumed. The default is 100.

Auto-Recovery When enabled (the default setting), this setting saves a copy of each open file at the specified time interval, in the same folder as the originals. If you have not saved the file yet, Animate saves the copies in its Temp folder. The file names are the same as the originals, with "RECOVER_" added to the beginning of the file name. If Animate quits unexpectedly, a dialog box appears when you restart to allow you to open the auto-recover file. When you exit Animate normally, the auto-recover files are deleted.

Starting Animate CC 2015 release, Animate does not create unnecessary auto-recovery files. An auto-recovery file is created only if the document is modified after the last auto-recovery files were created. Auto-recovery file is removed only after completing a successful save operation. To avoid continuous loop of auto-recovery for short auto-recovery

duration, snapshot for all files modified after last auto-recovery are created at each auto-recovery interval. Next auto recovery timer is started only after this process is completed.

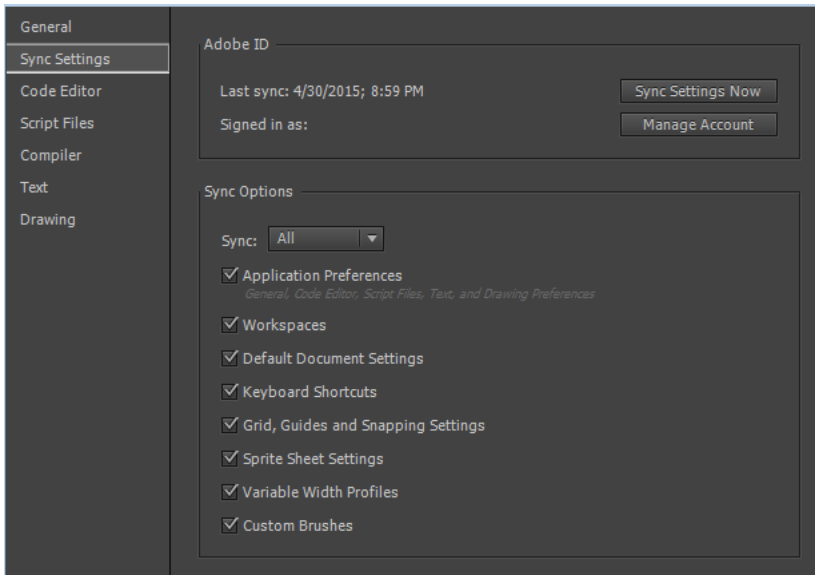
User Interface Select your preferred user interface style, between Dark or Light. To apply shading to the user interface elements, select Enable Shading.

Workspace To have panels in icon mode auto collapse when you click outside them, select Auto-Collapse Icon Panels. To open a separate window when you select Control > Test, select Open Animate and Script Documents in Separate Windows. The default is to open the test movie in its own window.

Highlight Color To use the current layer's outline color, select a color from the panel, or select Use Layer Color.

Set Sync Settings preferences

In the Sync Settings tab, you can specify the settings for synchronizing Animate with your Creatve Cloud account and libraries.



Sync Settings tab in the Preferences dialog box

Adobe ID This displays the Adobe ID using which you have signed in to your Creative Cloud account and the date and time the last sync with your Creative Cloud account was done.

- To view your Creative Cloud profile and library, or to login using a different Adobe ID, click Manage Account.
- To sync your settings, click Sync Settings Now.

Sync Options This displays the sync options that you have set between Animate and your Creative Cloud account. You can sync your application preferences; workspaces; default document settings; keyboard shortcuts; grid, guides, and snapping settings; sprite sheet settings; variable width profiles, and custom brushes.

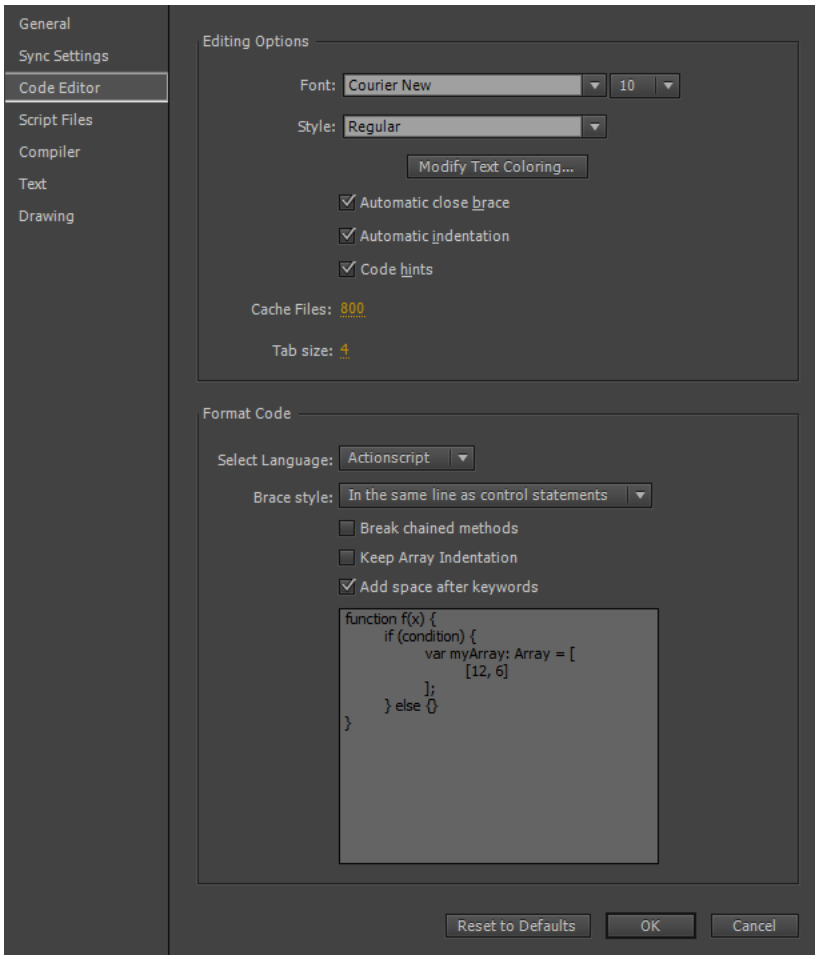
- **Sync**: Set the sync preferences by choosing among All (sync all the settings), Custom (sync the settings that you have selected from the options displayed below), or Disabled (disable all syncing).
- To sync your settings with your Creative Cloud settings, click Sync Settings Now.

To learn about synchronizing preferences to Creative Cloud, and across multiple machines, see Sync Animate Preferences with Creative Cloud

To learn more about working with Creative Cloud libraries, see Creative Cloud libraries.

Set Code Editor preferences

In the Code Editor tab, you can set how you want your code to be displayed in Animate.



Code Editor tab in the Preferences dialog box

Under **Editing Options**, you can change the defaults for the following:

- **Font**: Set the font and font size.
- **Style**: Choose between regular, italic, bold, or bold italic.
- **Modify Text Coloring**: Click this button to set text color for foreground, background, keywords, comments, identifiers, and strings.
- **Automatic code brace**: Enabled by default. All code braces are closed by default.
- **Automatic indentation**: Enabled by default. Turn it off if you do not want code indentation.
- **Code hints**: Enabled by default. Clear the checkbox if you do not want code hints to come up as you type code.
- **Cache Files**: Set the limit for the cache files. Default is 800.
- **Tab size**: The default size of the code tab is set to 4. Enter a value if you want to resize it.

Under **Format Code**, you can set the following preferences and check the preview pane for how the change willl be applied to your code:

- **Script Language**: Select the default script language as ActionScript or JavaScript. A sample code is displayed as you select an option.
- **Brace style**: Select your preferred brace style, either in the same line as control statements, in a separate line, or only the end braces in a separate line.
- **Break chained methods**: Select it to display code lines as broken up logically.
- **Keep array indentation**: Select to keep the arrays indented logically.
- **Keep space after keywords**: Selected by default. Change it if you do not want a space after each keyword.

Set Script Files preferences

The Script Files tab allows you to set the import options for the script files:

Open: Select UTF-8 Encoding to open or import using Unicode encoding, or select Default Encoding to open or import using the encoding form of the language currently used by your system.

Reload modified files: Specifies what happens when a script file is modified, moved, or deleted. Select Always, Never, or Prompt.

- Always: No warning is displayed, and the file is automatically reloaded.
- Never: No warning is displayed, and the file remains in the current state.
- Prompt(Default): A warning is displayed, and you can choose whether to reload the file.

When you build applications with external scripts, this preference helps you avoid overwriting a script that a team member has modified since you opened the application, or avoid publishing the application with older versions of scripts. The warnings let you automatically close a script and reopen the newer, modified version.

Class editor: Select the editor for editing classes. The options are Animate, Flash Builder, or Ask.

Set Compiler preferences

The Compiler tab in the Preferences dialog box allows you to set the following compiler preferences for the language you have selected. You can browse to a path or an SWC file or specify a new path:

- **SDK path**: The path to the folder containing bin, frameworks, lib, and other folders.
- **Source path**: The path to the folders containing ActionScript class files.
- **Library path**: The path to SWC files or folders containing SWC files.
- **External library path**: The path to the SWC files used as runtime shared libraries.

Set Text preferences

You can specify the following preferences for text display the Text tab:

- Default Mapping Font
- Style
- Show font name language
- Show font preview
- Font preview size

Set Drawing preferences

Pen tool: Lets you set options for the Pen tool. Select Show Pen Preview to display a preview line from the last clicked point to the current location of the pointer. Select Show Solid Points to display control points as small filled squares instead of unfilled squares. Select Show Precise Cursors to display a crosshair cursor instead of the Pen tool icon when using the Pen tool. This option lets you see the exact target of clicks more easily.

IK Bone Tool: Autoset Transformation Point is selected by default for the Bone Tool.

Connect lines: Determines how close the end of a line being drawn must be to an existing line segment before the end point snaps to the nearest point on the other line. This setting also controls horizontal and vertical line recognition—that is, how nearly horizontal or vertical a line must be drawn before Animate makes it exactly horizontal or vertical. When Snap To Objects is turned on, this setting controls how close objects must be to snap to one another.

Smooth curves: Specifies the amount of smoothing applied to curved lines drawn with the Pencil tool when the drawing mode is set to Straighten or Smooth. (Smoother curves are easier to reshape, whereas rougher curves match the original line strokes more closely.)

note: To further smooth existing curved segments, use Modify > Shape > Smooth and Modify > Shape > Optimize.

Recognize lines: Defines how nearly straight a line segment drawn with the Pencil tool must be before Animate recognizes it as a straight line and makes it perfectly straight. If Recognize Lines is off while you draw, straighten lines later by selecting one or more line segments and selecting Modify > Shape > Straighten.

Recognize shapes: Controls how precisely to draw circles, ovals, squares, rectangles, and 90° and 180° arcs for them to be recognized as geometric shapes and redrawn accurately. The options are Off, Strict, Normal, and Tolerant. Strict requires that the shape be drawn very close to straight; Tolerant specifies that the shape can be somewhat rough, and Animate redraws the shape. If Recognize Shapes is off while you draw, straighten lines later by selecting one or more shapes (for example, connected line segments) and selecting Modify > Shape > Straighten.

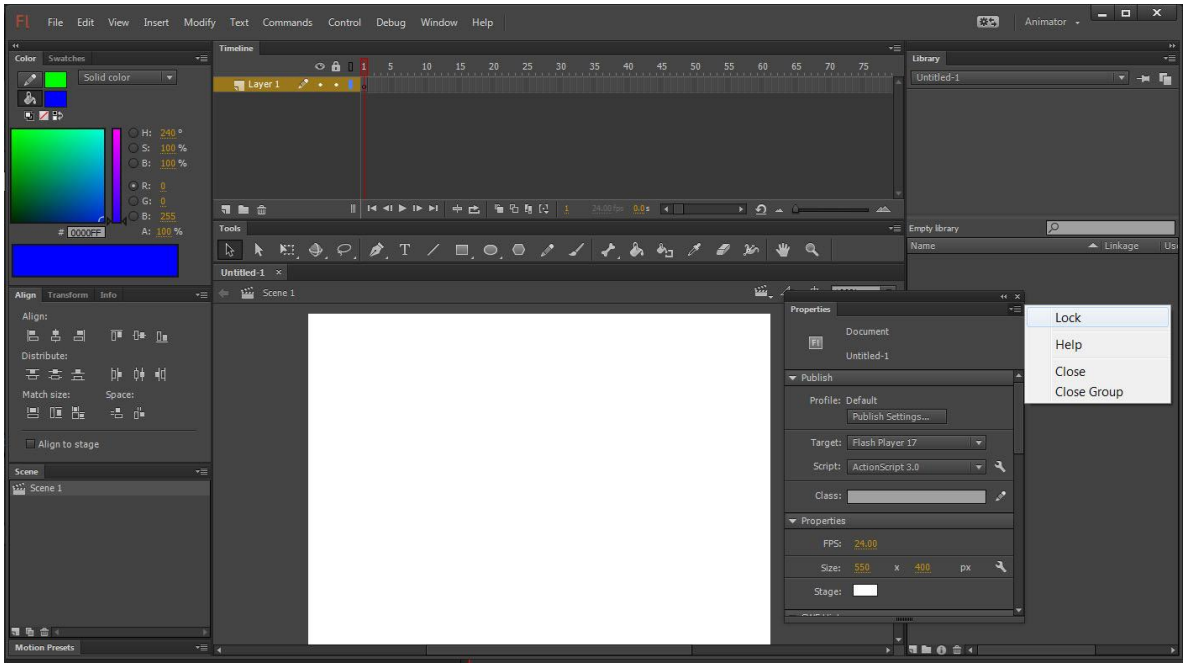
Click accuracy: Specifies how close to an item the pointer must be before Animate recognizes the item.

Restore all preferences to default settings

? In the Preferences dialog box, click Reset to Defaults or press and hold Control+Alt+Shift (Windows) or Command+Option+Shift (Mac OS) as you start Animate.

Using Animate CC authoring panels

Authoring panels in the Animate workspace carry the authoring and publishing controls that you can arrange according to your preferences. You can also drag any panel out of its place, resize it, and place it anywhere on your screen for easy access. Animate pop-up menus also give you an option to lock the panel at any particular place on your screen. If you lock, the panel does not move when you drag it accidentally while working.



Animate panels with the lock option

About the Property inspector

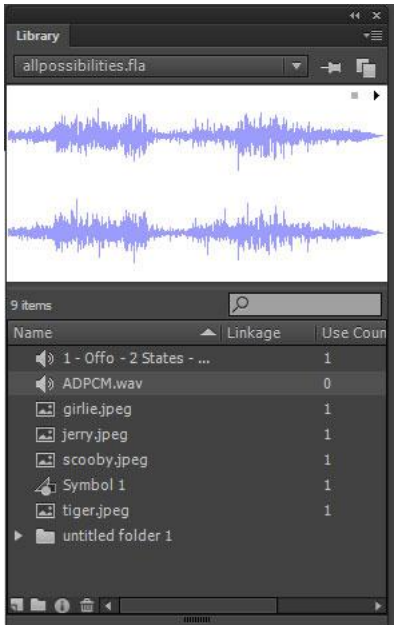
The Property inspector provides easy access to the most commonly used attributes of the current selection, either on the Stage or in the Timeline. You can modify the object or document attributes in the Property inspector without accessing the menus or panels that also control these attributes.

Depending on what is selected, the Property inspector displays information and settings for the current document, text, symbol, shape, bitmap, video, group, frame, or tool. When two or more different types of objects are selected, the Property inspector displays the total number of objects selected.

To display the Property inspector, Select **Window > Properties**, or press **Control+F3** (Windows) or **Command+F3** (Macintosh).

About the library panel

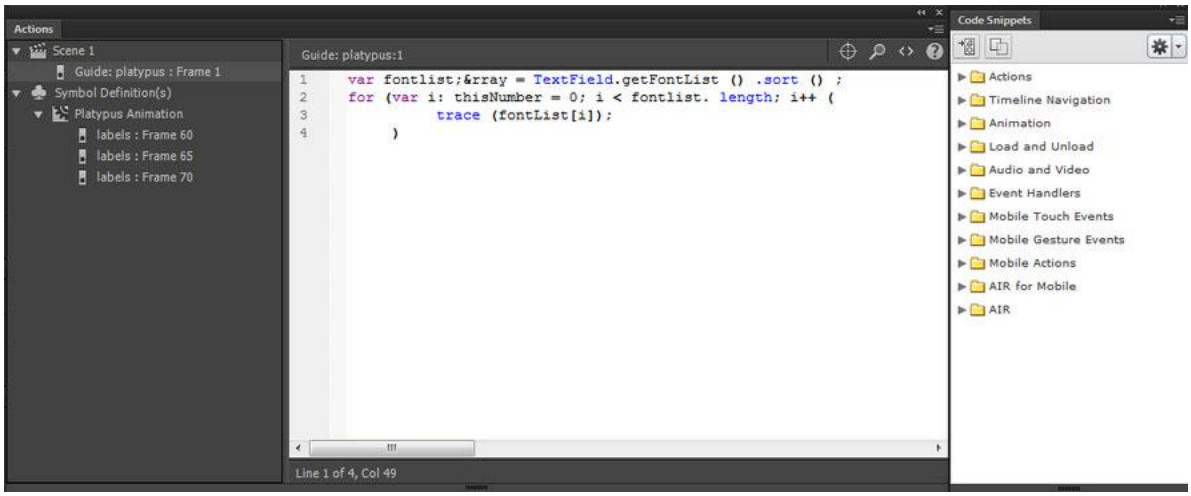
The **Library** panel (**Window > Library**) is where you store and organize symbols created in Animate. You can also store imported files, including bitmap graphics, sound files, and video clips. The **Library** panel lets you organize library items in folders. Also, see how often an item is used in a document, and sort items by name, type, date, use count, or ActionScript® linkage identifier. For example, when you import an animated GIF, it creates a folder named GIF under the root folder and places the file. You can also search the **Library** panel by typing in a symbol name or linkage name in the search field. You can also set properties on most multiple-object selections.



The Library panel with an audio clip selected

About the Actions panel

The Actions panel lets you create and edit ActionScript code for an object or frame. Selecting a frame, button, or movie clip instance makes the Actions panel active. The Actions panel title changes to Button Actions, Movie Clip Actions, or Frame Actions, depending on what is selected.



The Actions panel showing a stop() action in a frame.

To display the **Actions** panel, select **Window > Actions** or press F9. For more information on Actions panel, see Actions panel.

Using the movie explorer (deprecated with Animate CC)

The Movie Explorer lets you view and organize the contents of a document and select elements in the document for modification. It contains a display list of currently used elements, arranged in a navigable hierarchical tree.

Use the Movie Explorer to perform the following actions:

- Filter which categories of items in the document appear in the Movie Explorer.
- Display the selected categories as scenes, symbol definitions, or both.
- Expand and collapse the navigation tree.
- Search for an element in a document by name.
- Familiarize yourself with the structure of an Animate document that another developer created.
- Find all the instances of a particular symbol or action.
- Print the navigable display list that appears in the Movie Explorer.

The Movie Explorer has a Panel menu and a context menu with options for performing operations on selected items or modifying the Movie Explorer display. A check mark with a triangle below it in the Movie Explorer panel indicates the Panel menu.

Note:

The Movie Explorer has slightly different functionality when you are working with screens.

View the Movie Explorer

? Select **Window** > **Movie Explorer**.

Filter the categories of items that appear in the Movie Explorer

- To show text, symbols, ActionScript, imported files, or frames and layers, click one or more of the filtering buttons to the right of the Show option. To customize which items to show, click the Customize button. To view those elements, select options in the **Show** area of the **Movie Explorer Settings** dialog box.
- To show items in scenes, select **Show Movie Elements** from the Movie Explorer Panel menu.
- To show information about symbols, select Show Symbol Definitions from the Movie Explorer Panel menu.

Note:

*The **Movie Elements** option and the **Symbol Definitions** option can be active at the same time.*

Search for an item using the Find box

? In the Find box, enter the item name, font name, ActionScript string, or frame number. The Find feature searches all items that appear in the **Movie Explorer**.

Select an item in the Movie Explorer

? Click the item in the navigation tree. Shift-click to select more than one item.

The full path for the selected item appears at the bottom of the Movie Explorer. Selecting a scene in the Movie Explorer shows the first frame of that scene on the Stage. Selecting an element in the Movie Explorer selects that element on the Stage if the layer containing the element is not locked.

Use the Movie Explorer Panel menu or context menu commands

1 Do one of the following:

- To view the Panel menu, click the Panel menu control in the Movie Explorer panel.
- To view the context menu, right-click (Windows) or Control-click (Macintosh) an item in the Movie Explorer navigation tree.

2 Select an option from the menu:

Go To Location Jumps to the selected layer, scene, or frame in the document.

Go To Symbol Definition Jumps to the symbol definition for a symbol that is selected in the Movie Elements area of the Movie Explorer. The symbol definition lists all the files associated with the symbol. (The Show Symbol Definitions option must be selected. See its definition in this list.)

Select Symbol Instances Jumps to the scene containing instances of a symbol that is selected in the Symbol Definitions area of the Movie Explorer. (The Show Movie Elements option must be selected.)

Show In Library Highlights the selected symbol in the document's library. (Animate opens the Library panel if it is not already visible.)

Rename Lets you enter a new name for a selected element.

Edit In Place Lets you edit a selected symbol on the Stage.

Edit In New Window Lets you edit a selected symbol in a new window.

Show Movie Elements Shows the elements in your document organized into scenes.

Show Symbol Definitions Shows all the elements associated with a symbol.

Copy All Text To Clipboard It copies selected text to the clipboard. For spell checking or other editing, paste the text into an external text editor.

Cut, Copy, Paste, And Clear Performs these common functions on a selected element. Modifying an item in the display list modifies the corresponding item in the document.

Expand Branch Expands the navigation tree at the selected element.

Collapse Branch Collapses the navigation tree at the selected element.

Collapse Others Collapses the branches in the navigation tree that do not contain the selected element.

Print Prints the hierarchical display list that appears in the Movie Explorer.

Using Animate components and components panel

A component in Animate is a reusable, packaged module that adds a particular capability to an Animate document. Components can include graphics and code, so they are pre-built functionality that you can easily include in your Animate projects. For example, a component can be a radio button, a dialog box, or a preload bar. It can also be something that has no graphics at all, such as a timer, a server connection utility, or a custom XML parser.

If you are less experienced with writing ActionScript, you can add components to a document and set their parameters in the Property inspector or Component inspector. Use the Behaviors panel to handle their events. For example, you could attach a Go To Web Page behavior to a Button component. Button can open a URL in a web browser when it is clicked without writing any ActionScript code.

If you are a programmer who wants to create more robust applications, you can create components dynamically. Use ActionScript to set properties and call methods at runtime, and use the event listener model to handle events.

Insert a component using the component panel

When you first add a component to a document, Animate imports it as a movie clip into the Library panel. You can also drag a component from the Components panel directly to the Library panel and then add an instance of it to the Stage. In any case, you must add a component to the library before you can access its class elements.

1 Select **Window > Component** panel.

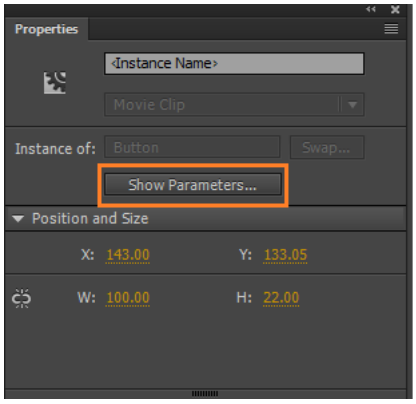
2 Select an instance of a component in the Component panel, and drag it to the Stage or Library panel. After a component is added to the library, you can drag multiple instances to the Stage.

3 Configure the component as needed using either the Property inspector or the Components inspector. For information on the parameters the component uses, refer to the appropriate component documentation for the version of ActionScript you are using in the Animate document.

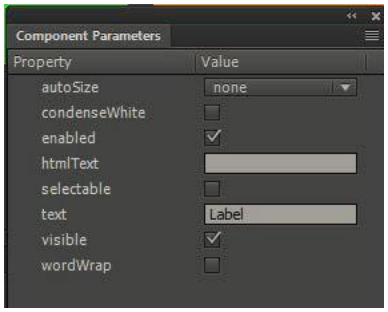
Using the component parameters panel

Animate designers can import their external components to Animate and use them to build their animations. To make this workflow easier, Animate provides component parameters section as a panel. This feature lets you resize or move this panel around in Animate staging environment. You can also lock the panel in place by clicking the hamburger icon at the upper-right corner of the panel. Select the lock option from the menu.

You can open this panel by using **Show Parameters** button in the Property inspector or by using **Window > Component Parameters**. You can add values for the parameters in the dialog.



Show parameters button



Component parameters panel

In addition, HTML5 custom component developers can use HTML/CSS based user interface for its parameters.

About the web services panel

(Deprecated with Animate CC) You can view a list of web services, refresh web services, and add or remove web services in the Web Services panel. Click **Window > Other Panels > Web Services** . When you add a web service to the Web Services panel, the web service is then available to any application you create.

You can use the Web Services panel to refresh all your web services at once by clicking the **Refresh Web Services** button. If you are not using the stage but you are writing ActionScript code, you can use the Web Services panel to manage your web services.

Create timeline layers with Animate CC

Creating and organizing layers

Layers enable you to organize the artwork in your document. You can draw and edit objects on one layer without affecting objects on another layer. In areas of the Stage with nothing on a layer, you can see through it to the layers below.

To draw, paint, or otherwise modify a layer or folder, select the layer in the timeline to make it active. A pencil icon next to a layer or folder name in the timeline indicates that the layer or folder is active. Only one layer can be active at a time (although more than one layer can be selected at a time).

When you create an Animate CC (formerly Flash Professional CC) document, it contains only one layer. To organize the artwork, animation, and other elements in your document, add more layers. You can also hide, lock, or rearrange layers. The number of layers you can create is limited only by your computer's memory. Layers do not increase the file size of your published SWF file. Only the objects you place into layers add to the file size.

To organize and manage layers, create layer folders and place layers in them. You can expand or collapse layer folders in the timeline without affecting what you see on the stage. Use separate layers or folders for sound files, ActionScript, frame labels, and frame comments. Using separate layers helps you find these items quickly to edit them.

To enable creating sophisticated effects, use special guide layers to make drawing and editing easier, and to make mask layers.

There are five types of layers you can use in Animate:

- Normal layers contain most of the artwork in an fla file.
- Mask layers contain objects used as masks to hide selected portions of layers below them. For more information, see .
- Masked layers are layers beneath a mask layer that you associate with the mask layer. Only the portion of the masked layer revealed by the mask is visible. For more information, see .
- Guide layers contain strokes that can be used to guide the arrangement of objects on other layers. Also, you can use to guide the motion of classic tween animations on other layers. For more information, see Guide layers and Creating classic tween animation along a path.
- Guided layers are layers associated with a guide layer. The objects on the guided layer can be arranged or animated along the strokes on the guide layer. Guided layers can contain static artwork and classic tweens, but not motion tweens.
- Motion Tween layers contain objects animated with motion tweens. For more information, see About tweened animation.
- Armature layers contain objects with inverse kinematics bones attached. For more information, see Using Bone tool animation in Animate CC.

Normal, Mask, Masked, and Guide layers can contain motion tweens or inverse kinematic bones. When these items are present in one of these layers, there are limitations to the types of content that can be added to the layer. For more information, see Motion tweens and Using Bone tool animation in Animate CC.

Creating a layer

When you create a layer, it appears above the selected layer. The newly added layer becomes the active layer.

? Do one of the following:

- Click the new layer button at the bottom of the timeline.
- Select **Insert** > **Timeline** > **Layer**.
- Right-click (Windows) or **control+click** (Macintosh) a layer name in the timeline and select **Insert Layer** from the context menu.

Creating a layer folder

? Do one of the following:

- Select a layer or folder in the Timeline and select **Insert** > **Timeline** > **Layer Folder**.
- Right-click (Windows) or **control+click** (Macintosh) a layer name in the Timeline and select Insert Folder from the context menu. The new folder appears above the layer or folder you selected.
- Click the new folder icon at the bottom of the Timeline. The new folder appears above the layer or folder you selected.

Organizing layers and layer folders

To organize your document, rearrange layers and folders in the Timeline.

Layer folders organize your workflow by letting you place layers in a tree structure. To see the layers a folder contains without affecting which layers are visible on the Stage, expand or collapse the folder. Folders can contain both layers and other folders, allowing you to organize layers in much the same way you organize files on your computer.

The layer controls in the timeline affect all layers within a folder. For example, locking a layer folder locks all layers within that folder.

- To move a layer or layer folder into a layer folder, drag the layer or layer folder name to the destination layer folder name.
- To change the order of layers or folders, drag one or more layers or folders in the Timeline to the desired position.
- To expand or collapse a folder, click the triangle to the left of the folder name.
- To expand or collapse all folders, right-click (Windows) or **control+click** (Macintosh) and select **Expand All Folders** or **Collapse All Folders**.

Renaming a layer or folder

By default, Animate assigns names to new layers by the order in which they are created: Layer 1, Layer 2, and so on. To better reflect their contents, rename layers.

? Do one of the following:

- Double-click the name of the layer or folder in the timeline and enter a new name.
- Right-click (Windows) or Control-click (Macintosh) the name of the layer or folder and select Properties from the context menu. Enter the new name in the Name box and click OK.
- Select the layer or folder in the Timeline and select **Modify** > **Timeline** > **Layer Properties**. Enter the new name in the **Name** box and click **OK**.

Selecting a layer or folder

? Do one of the following:

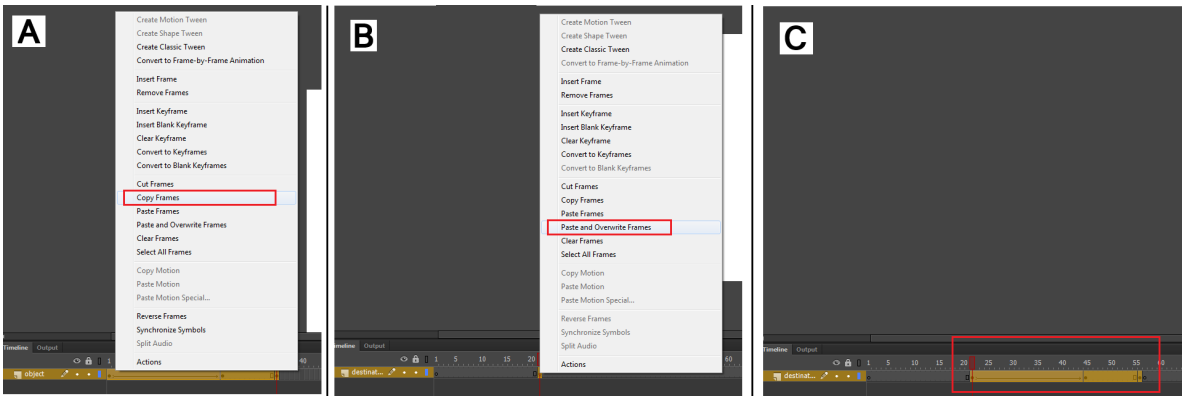
- Click the name of a layer or folder in the Timeline.
- Click any frame in the Timeline of the layer to select.
- Select an object on the Stage that is located in the layer to select.
- To select contiguous layers or folders, Shift-click their names in the Timeline.
- To select non-contiguous layers or folders, Control-click (Windows) or Command-click (Macintosh) their names in the Timeline.

Copying frames from a single layer

1 Select a range of frames in a layer. To select the entire layer, click the layer name in the Timeline.

2 Select **Edit** > **Timeline** > **Copy Frames**.

3 Click the frame where you want to begin pasting and select **Edit** > **Timeline** > **Paste Frames**. To replace the exact number of copied frames on the target timeline, use the **Paste and Overwrite Frames** option.



Paste and overwrite frames workflow
***A** Select frames and copy.* ***B** Right-click the frame on which you want to paste and select Paste and Overwrite Frames.* ***C** The pasted frames overwrite the exact number of frames on the timeline.*

Copying frames from a layer folder

1 To select the entire folder, collapse the folder (click the triangle to the left of the folder name in the Timeline) and click the folder name.

2 Select **Edit** > **Timeline** > **Copy Frames**.

3 To create a folder, select **Insert** > **Timeline** > **Layer** Folder.

4 Click the new folder and select **Edit** > **Timeline** > **Paste** Frames.

Deleting a layer or folder

1 To select the layer or folder, click its name in the Timeline or any frame in the layer.

2 Do one of the following:

- Click the delete layer button in the **Timeline**.
- Drag the layer or folder to the Delete Layer button.
- Right-click (Windows) or **Control+click** (Macintosh) the layer or folder name and select **Delete Layers** from the context menu.

Note:

When you delete a layer folder, all the enclosed layers and their content are also deleted.

Locking or unlocking one or more layers or folders

- To lock a layer or folder, click in the lock column to the right of the name. To unlock the layer or folder, click in the Lock column again.
- To lock all layers and folders, click the padlock icon. To unlock all layers and folders, click it again.
- To lock or unlock multiple layers or folders, drag through the Lock column.
- To lock all other layers or folders, use **Alt+click** (Windows) or **Option+click** (Macintosh) in the lock column. To unlock all layers or folders, use **Alt+click** or **Option+click** (Macintosh) in the lock column again.

Copying and pasting layers (CS5.5 only)

You can copy entire layers and layer folders in the timeline and paste them into the same timeline or separate timelines. Any type of layer can be copied.

When you copy and paste layers, the layer folder structure of copied layers is preserved.

1. Select one or more layers in the timeline by clicking the layer name. **Shift+click** to select contiguous layers. **Control+click** (Windows) or **Command+click** (Macintosh) to select non-contiguous layers.
2. Choose **Edit > Timeline > Copy Layers** or **Cut Layers**. You can also right-click the layers and choose **Copy Layers** or **Cut Layers** from the context menu.
3. In the timeline you want to paste into, select the layer immediately below where you want the pasted layers to be inserted.
4. Choose **Edit > Timeline > Paste Layers**.

The layers appear in the timeline above the layer you selected. If you have a layer folder selected, the pasted layers appear inside the folder.

To place a layer into a mask or guide layer, you must first select a layer under that mask or guide and then paste. You cannot paste either a mask, guide, or folder layer underneath a mask or guide layer.

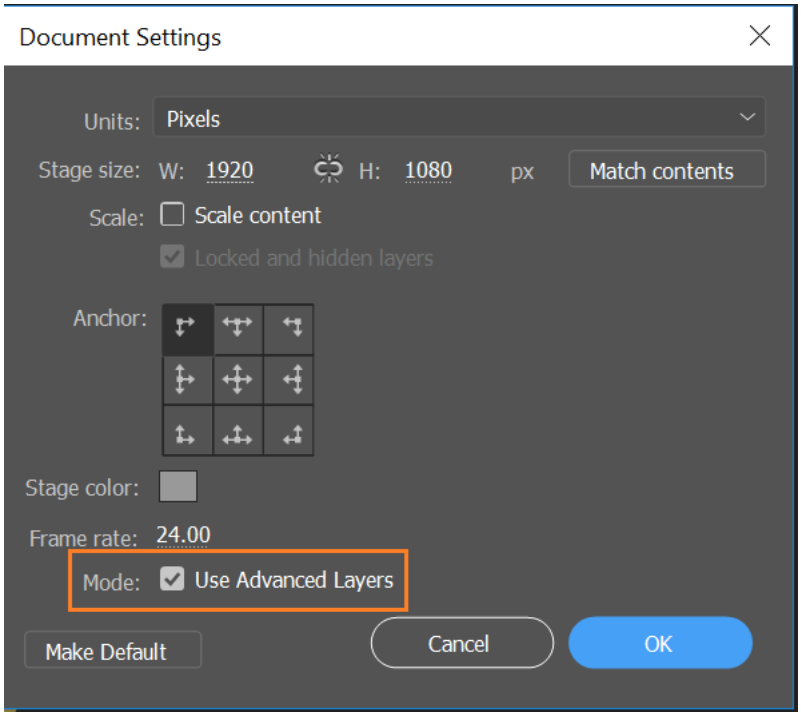
You can also duplicate layers by selecting layers and choosing **Edit > Timeline > Duplicate Layers**. The new layers have the word "copy" appended to the layer name.

Using advanced layers

In Animate CC, with Advanced Layers mode, all layers in timeline are published as symbols. Advanced layers mode allows you to access the following features:

- **Applying layer depth**
- **Layer parenting**
- **Applying layer effects**
- **Creating parallax effect with camera and layer depth**

Advanced Layers mode is enabled by default. You can enable or disable Advanced Layers using **Modify > Document** settings. After applying the changes, click **Make default** to preserve current setting for the subsequent documents and across Animate sessions.



Advanced layers mode

While accessing these symbols using script in Animate, you have to call them using layer as an object. For example, when you are not using advanced layers, you can directly access a symbol using a script similar to the following sample:

getchildbyname("symbol1");

But, when you use advanced layers, you can access the symbol only through a layer by using a script similar to the following sample:

Layer=getchildbyname("L1");

Layer.getchildbyname("symbol1");

A sample code to access symbols using advanced layers for AS3 document type:

```
Var Layer:MovieClip =MovieClip(getchildbyname("L1"));
Layer.getchildbyname("symbol1");
```

A sample code to access symbols using advanced layers for HTML5 canvas document type:

```
Layer=this.getchildbyname("L1");
Layer.getchildbyname("symbol1");
```

The following illustration depicts how you can access a symbol using script with advanced layers and without advanced layers.

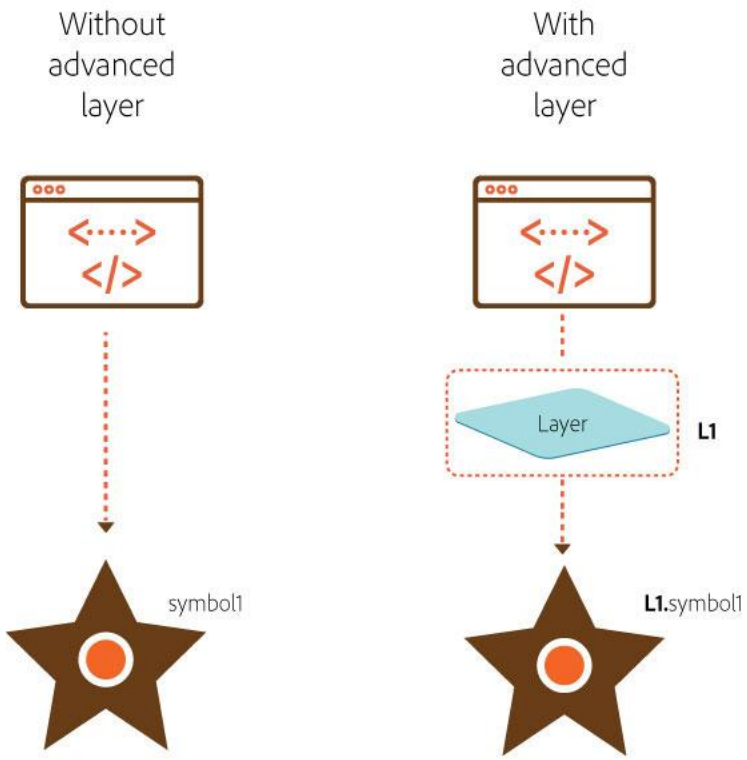


Illustration on how to access symbol with and without advanced layers

Note:

The size of your published animation projects can increase when you use advanced layers in Animate. If you find any issues while accessing camera or layer depth features, check if the advanced layers is ON. If it is disabled, enable it to get expected behavior.

Applying layer effects

The filters and color effects used to be applicable only to movie clips and graphic symbols. With the advanced layers, filters and color effects can now be applied to a selective frame(s), which in turn applies to all its content including shapes, drawing objects, graphic symbols, and so on. Layer effects can also be tweened using classic, shape, and IK tweens across frames.

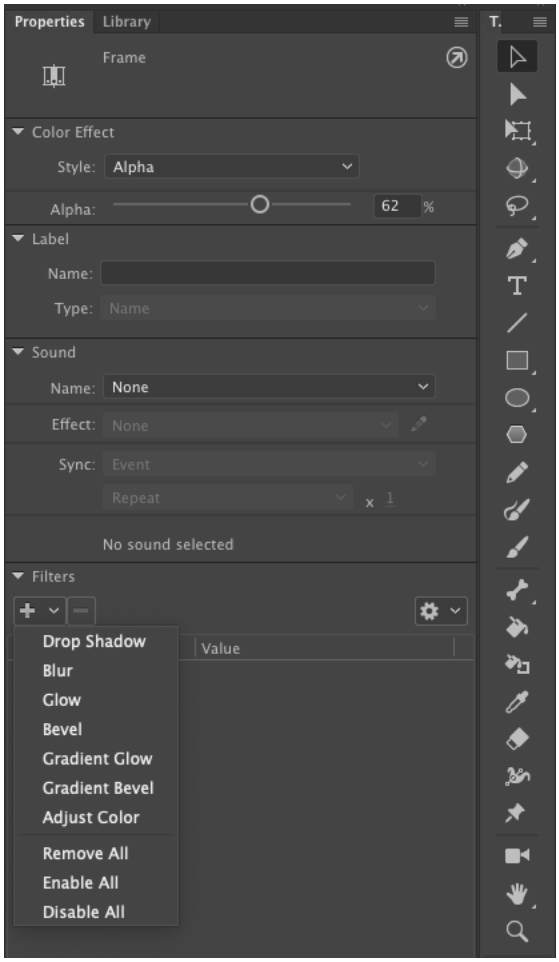
You can apply layer effects on individual or on multiple frames by selecting desired frames. You can also apply layer effects on all the frames of layer by selecting the entire layer. Layer effects can also be applied on symbol's timeline such as movie clip and graphic symbol and across all the scenes.

Note:

Layer effects can be applied only when Advanced Layers mode is ON. You may have to enable Advanced Layers mode explicitly for files to use this functionality.

Using filters for frames

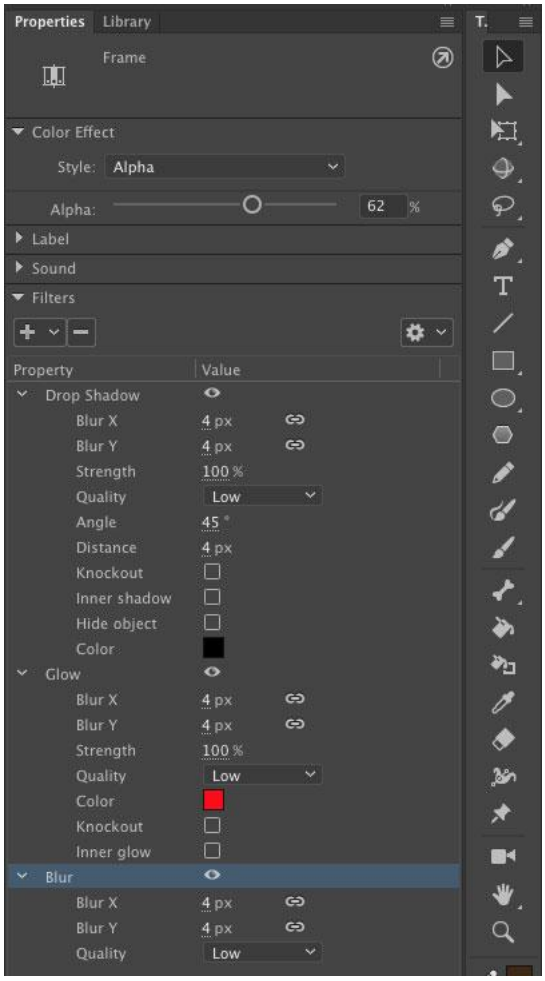
To add filters on a particular frame, first select the frame. Properties Inspector panel loads the frame specific properties. Click the + icon in **Filters** drop-down list.



Frame filters

When you add filters on frames, the Property Inspector appears as shown in the following screenshot.

You can set the properties for each of the filters as per your requirement and apply them at a frame level. Tweening is applicable for all the frame filters.



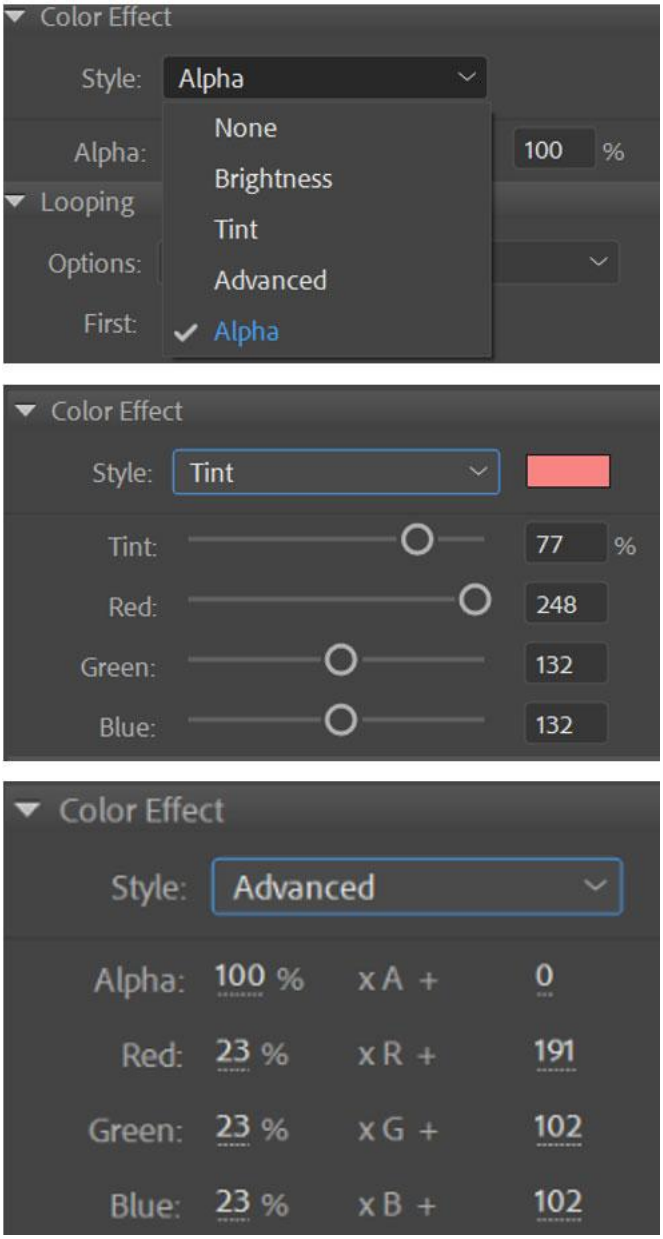
Frame filters properties in Property Inspector

Note:

Layer effects are supported only on ActionScript 3 document type. Motion tween and camera layers do not support layer effects.

Using color effects

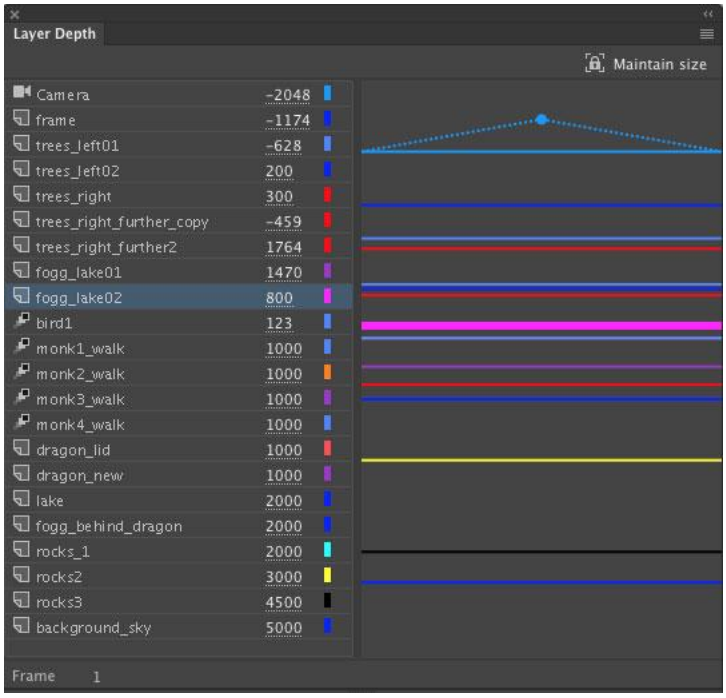
To apply color effect on a particular frame, first select the frame. Property Inspector panel loads the frame specific properties. Choose any of the desired color property from Property Inspector panel.



Applying layer depth

As an Animator, you can place the layers in different planes of 2D animation creating an illusion of depth.

You can dynamically change depths of layers from **Layer Depth** panel. To open layer depth panel, click **Window** > **Layer Depth**.



Layer depth representing each layer

Note:

You can set the minimum and maximum values of layer depth within -5000 to 10000 range.

As shown in the above screenshot, the layer depth values are displayed next to each layer name for a given frame.

- Hover the mouse on each value, click, and drag slider to your right or left.
- To decrease the depth, drag slider to your left. To increase the depth, drag slider to your right.
- You can use lower positive values to represent objects that are closer and higher positive values to represent far-away objects.

You can tween the layer depth values in any of the tween spans for your animation.

Each layer is represented with unique colored lines in layer depth panel. You can view the colors representing each of the layers in timeline.

You can also increase or decrease the depth of objects in each layer by moving the multi-colored lines up or down.

- To decrease depth of objects in a layer, click and drag the line in upward direction.
- To increase depth of objects in a layer, click and drag the line in downward direction.

An illustration depicting animations with and without layer depth:

Content without layer depth

Content with layer depth

An illustration depicting an animation when layer depth is applied:

You can use the camera on multi-plane layers to create a parallax effect or to zoom into the content on a plane. You can also lock the camera on a specific layer, or apply camera effects at runtime using interactive APIs. For more information, see Creating parallax effect with camera and layer depth.

Note:

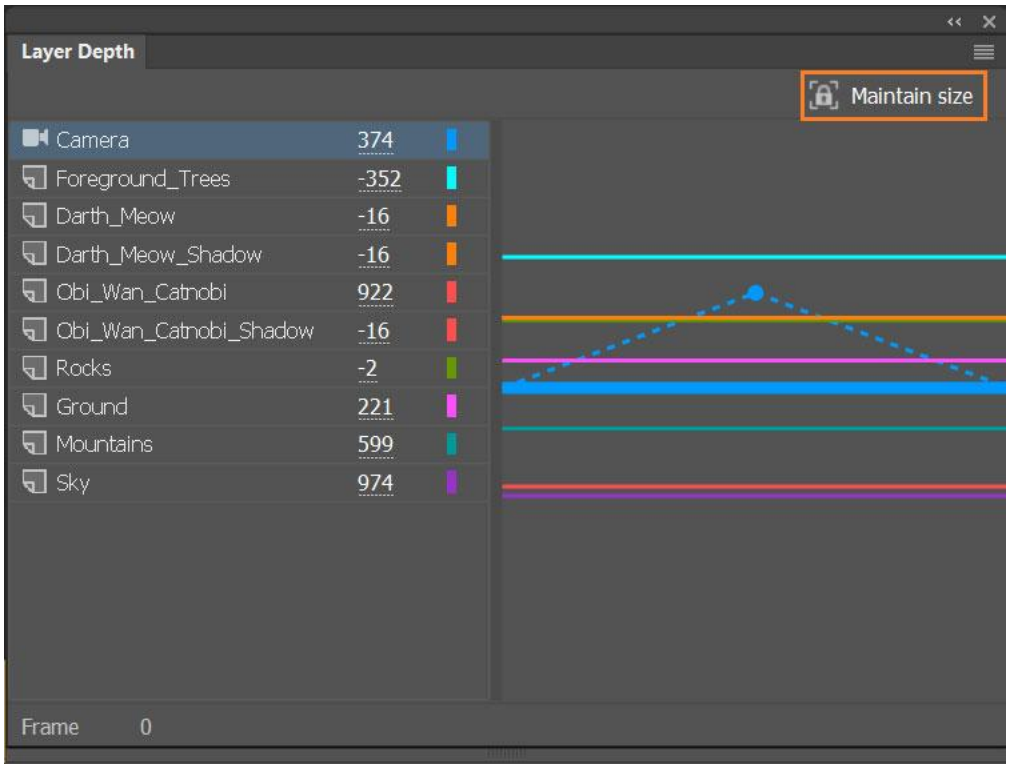
Layer depth is applicable only on main timeline.

Maintain size for layer depth

You can change layer depth of objects without affecting the size and position of objects. To use maintain size functionality, click the **Maintain size** button at the upper-right corner of the **Layer Depth** panel.

You can use maintain size option in two modes:

- Click **Maintain size** button and modify the layer depth of the desired layer. **Maintain Size** button toggles up automatically.
- Press and hold the **Alt** key to temporarily enable **Maintain size** option while dragging the layer depth values.



Maintain size for layer depth

Applying layer depth at runtime

You can also introduce camera on objects at runtime and apply effects by using camera APIs. For more information, see Using camera at runtime.

Layer depth API for AS3

You can manage the layers at runtime by using APIs. For example, at runtime when you want to introduce an extra layer in the animation or decrease the depth of one of the layers in the animation.

Method	Prototype	Example	Description
setLayerZDepth	fl.Layer.setLayerZDepth(timeline, layerName,zDepth)	*fl.Layer.setLayerZDepth("layerName", 100);*	Set Z depth value of a particular layer.
getLayerZDepth	*fl.Layer.getLayerZDepth(layerName) :zDepth*	*fl.Layer.getLayerZDepth("layerName");*	Return the Z depth value of a particular layer.
addNewLayer	fl.Layer.addNewLayer(layerName, zDepth=0)	*fl.Layer.addNewLayer("layerName", -80);*	Add new layer to timeline and set the Z depth.
removeLayer	*fl.Layer.removeLayer(layerName)*	*fl.Layer.removeLayer("layerName");*	Remove a layer from timeline.

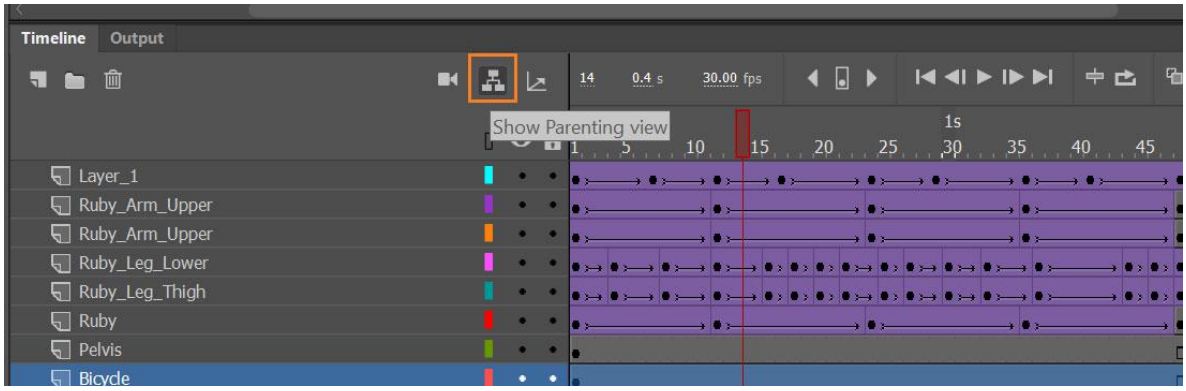
Layer depth API for HTML canvas

Method	Prototype	Example	Description
setLayerZDepth	AdobeAn.Layer.setLayerZDepth(layerName, zDepth)	console.log(fl.Layer.setLayerZDepth ("layerName",100));	Set Z depth value of a particular layer.
getLayerZDepth	AdobeAn.Layer.getLayerZDepth(layerName) :zDepth	console.log(fl.Layer.getLayerZDepth ("layerName"));	Return the Z depth value of a particular layer.

Layer parenting

Animate allows you to parent one layer to another. Layer parenting is an easy way to allow one layer/object of your animation to control over the other layer/object. As an animation designer or a game designer, you can speed up your animation time as you can control movements of different parts of a character more easily.

Layer parenting view requires the **Advanced layers** to be enabled. By default, **Advanced layers** is switched ON for new files. You can enable layer parenting view by clicking the hierarchy symbol icon at the top-right corner of timeline.



Show layer parenting

Note:

Parenting for warped objects works only when the child layer object's transformation point is on the parent layer object.

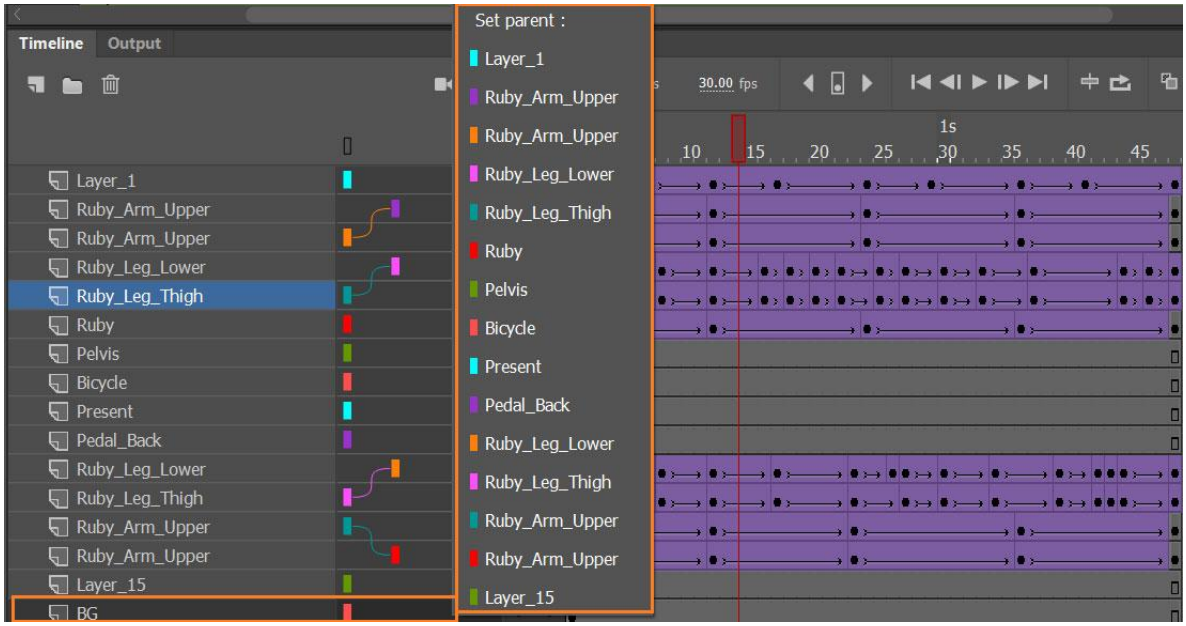
Parent and child layers

In parenting view, when you drag layer 1 over to layer 2, then layer 1 becomes the child of the parent layer 2. The object on the child layer inherits the position and rotation of the object on the parent layer apart from carrying its own properties. So, when you move or rotate the parent, the child also moves or rotates along with the parent. You can create multiple parent-child relationships to create a hierarchy.

Parenting layers

You can connect one layer to another layer, by clicking on the layer handle (color head) and dragging it over the other layer. Alternatively, you can click anywhere on the horizontal rectangular space adjacent to layer name and drag it over the other layer. You can also use single click on any layer and choose the parent layer for it from the pop-up list.

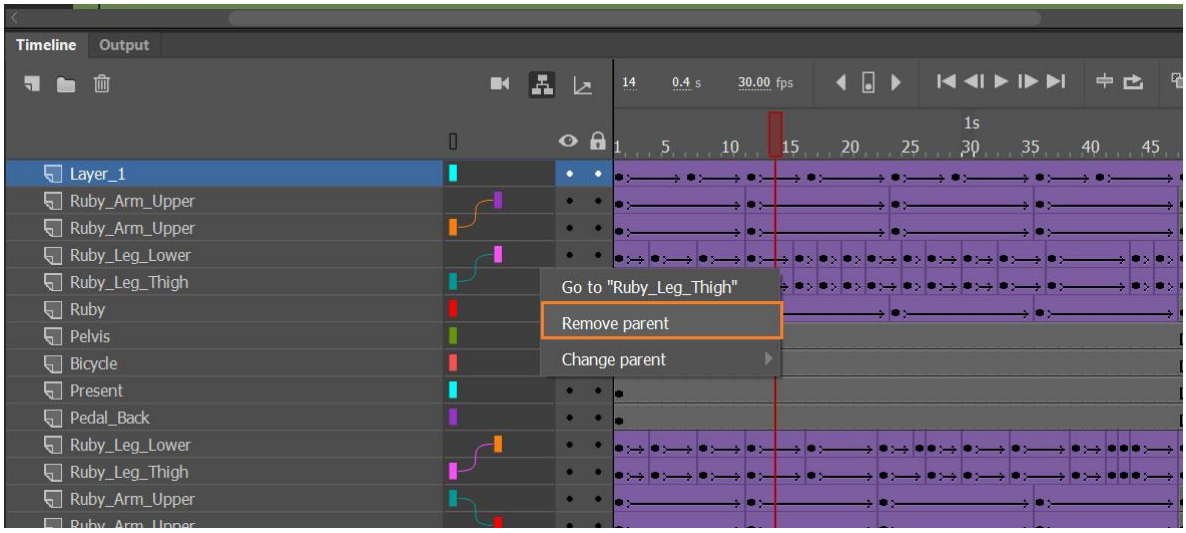
A dotted line appears adjacent to the layer's color head as soon as you click and try to drag the line. A parent-child connection establishes between the two layers as soon as you release the click and drag action.



Set parent layer

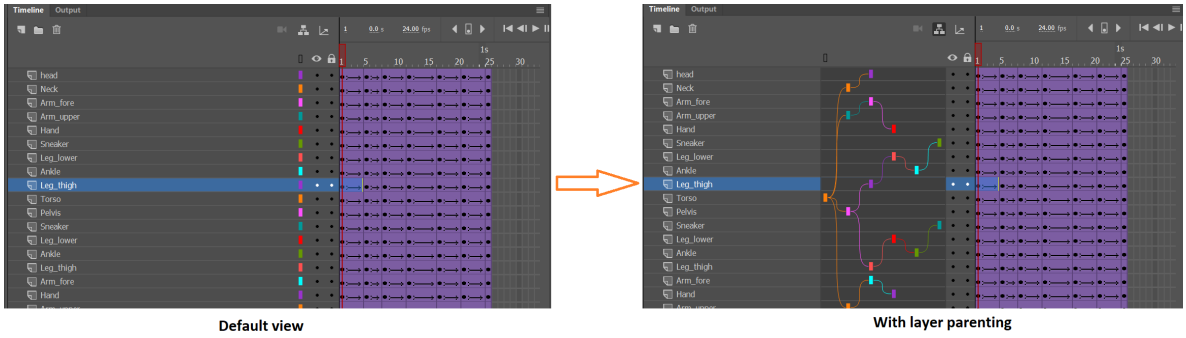
The left most color head in the layer parenting view hierarchy represents the parent. The parent-child hierarchy moves from left to right.

You can remove the connection by clicking on any layer's color head and dragging the dotted line and releasing it. Alternatively, you can click on the horizontal space and click **Remove parent** as shown in the screenshot below.



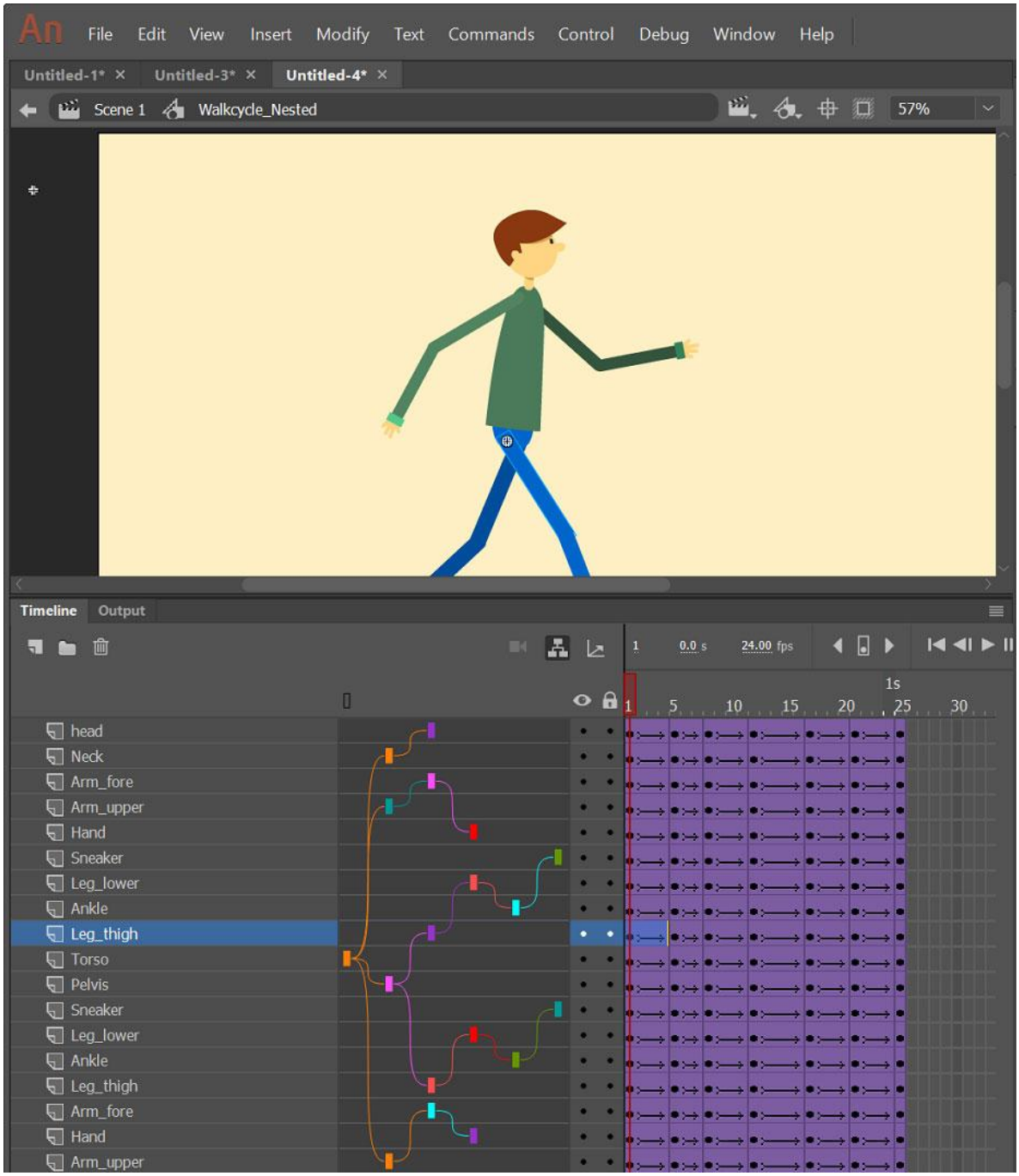
Remove parent

In the screenshots below, you can see the before and after views of layers hierarchy and positions when you use layer parenting.



Before and after applying layer parenting

A sample illustration representing the usage of layer parenting for human body parts is show below.



Sample illustration of body parts with layer parenting

In the above illustration,

- Torso is the parent of all the parts of the body.
- Legs_thigh is the parent of various other parts of a leg such as Sneaker, Leg_lower, and Ankle.
- Head is a child of the parent, Neck and Torso is the parent of Neck. So, whenever you drag the neck away from the body, the head part also moves along with it.

Note:

Parenting is a frame property you need to set for each key-frame on the child layer. On a key-frame, you can break or re-parent the child layer to another parent layer.

A tutorial on Layer parenting

A tutorial on Layer parenting

Viewing layers and layer folders

Showing or hiding a layer or folder

A red X next to the name of a layer or folder in the Timeline indicates that a layer or folder is hidden. In the publish settings, you can choose whether hidden layers are included when you publish a SWF file.

- To hide a layer or folder, click in the Eye column to the right of the layer or folder name in the timeline. To show the layer or folder, click in it again.
- To hide all the layers and folders in the timeline, click the eye icon. To show all layers and folders, click it again.
- To show or hide multiple layers or folders, drag through the eye icon column.
- To hide all layers and folders other than the current layer or folder, **Alt+click** (Windows) or Option-click (Macintosh) in the eye icon column. To show all layers and folders, **Alt+click** or Option-click it again.

Viewing the contents of a layer as outlines

To distinguish which layer an object belongs to, display all objects on a layer as colored outlines.

- To display all objects on that layer as outlines, click in the Outline column to the right of the layer's name. To turn off outline display, click in it again.
- To display objects on all layers as outlines, click the outline icon. To turn off outline display on all layers, click it again.
- To display objects on all layers other than the current layer, **Alt+click** (Windows) or Option-click (Macintosh) in the outline column. To turn off the outline display for all layers, **Alt+click** or Option-click in it again.

Changing an outline color of a layer

1 Do one of the following:

   - Double-click the layer's icon (the icon to the left of the layer name) in the timeline.
   - Right-click (Windows) or **Control+click** (Macintosh) the layer name and select **Properties** from the context menu.
   - Select the layer in the timeline and select **Modify** > **Timeline** > **Layer Properties**.

2 In the **Layer Properties** dialog, click the **Outline color** palette, select a new color, and click **OK**.

Note:

Motion paths on the layer also use the layer outline color.

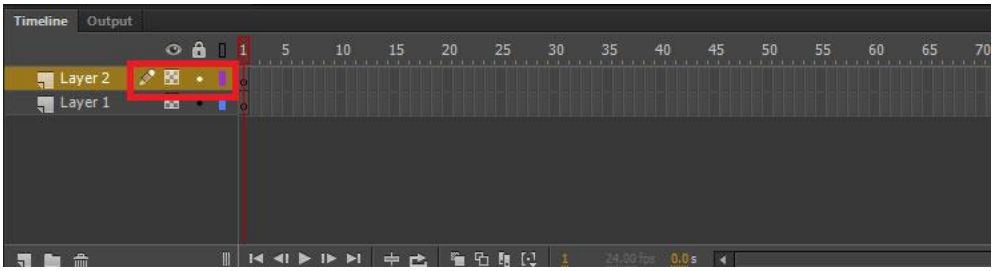
Setting layer transparency

1 In Animate CC, create an fla file or open an existing one.

2 **Shift+click** the eye icon column in the timeline to set the visibility to transparent.

Note:

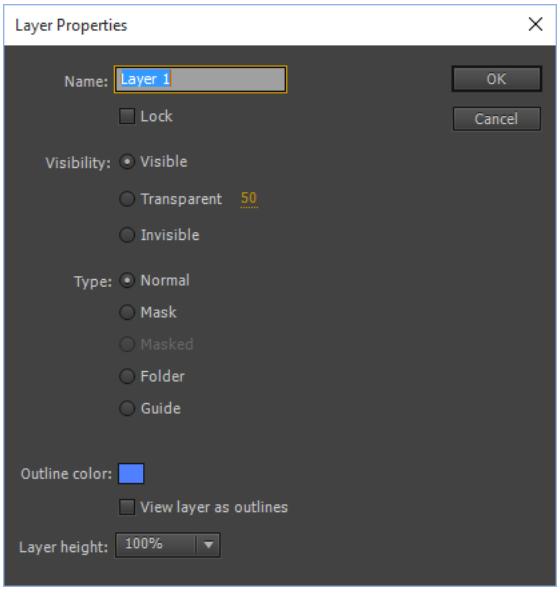
Shift+click has no effect on the hidden layers.



Setting layer transparency

3 Use any of the following options to set layer transparency:

- Right-click any layer and select **Properties** from the context menu. In the **Layer Properties** dialog, select **Visibility>Transparent.**
- Right-click any layer and select **Show Others Transparent.**



Layer Properties

4 Click **OK**.

Note:

Layer transparency has no effect on hidden layers.

Setting properties to multiple layers

1 In Animate CC, create a FLA file or open an existing one.

2 Select those layers whose properties you want to modify, right-click, and select **Properties**.

3 In the **Layer Properties** dialog, modify the properties.

4 Click OK.

Showing or hiding a layer or folder

A red X next to the name of a layer or folder in the timeline indicates that a layer or folder is hidden. In the publish settings, you can choose whether hidden layers are included when you publish a SWF file.

- To hide a layer or folder, click in the Eye column to the right of the layer or folder name in the timeline. To show the layer or folder, click in it again.
- To hide all the layers and folders in the timeline, click the eye icon. To show all layers and folders, click it again.
- To show or hide multiple layers or folders, drag through the eye icon column.
- To hide all layers and folders other than the current layer or folder, **Alt+click** (Windows) or Option-click (Macintosh) in the Eye icon column. To show all layers and folders, **Alt+click** or Option-click it again.

Viewing the contents of a layer as outlines

To distinguish which layer an object belongs to, display all objects on a layer as colored outlines.

- To display all objects on that layer as outlines, click in the Outline column to the right of the layer's name. To turn off outline display, click in it again.
- To display objects on all layers as outlines, click the outline icon. To turn off outline display on all layers, click it again.
- To display objects on all layers other than the current layer as outlines, **Alt+click** (Windows) or Option-click (Macintosh) in the Outline column. To turn off the outline display for all layers, **Alt+click** or Option-click in it again.

Change a layer's outline color

1 Do one of the following:

- Double-click the layer's icon (the icon to the left of the layer name) in the timeline.
- Right-click (Windows) or Control-click (Macintosh) the layer name and select **Properties** from the context menu.
- Select the layer in the timeline and select **Modify > Timeline > Layer Properties**.

2 In the **Layer Properties** dialog, click the **Outline color** palette, select a new color, and click **OK**.

Note:

Motion paths on the layer also use the layer outline color.

Moving and copying objects

You can move objects by dragging them with specific tool, by using the arrow keys on the keyboard, or by entering precise values in a panel. You can also copy objects using clipboard, clone the objects or duplicate transformed objects.

Move objects by dragging

1 Select an object or multiple objects.

Note:

Looking for Help with selection tool? See Selecting objects in Animate CC.

2 Select the Selection tool , position the pointer over the object.

3 To move the object, drag it to the new position. You can use mouse click and drag or use arrow key in the keyboard.

4 To constrain the object's movement to straight lines, in multiples of 45°, Shift-drag.

Move objects by using the arrow keys

1 Select an object or multiple objects.

2 Do one of the following:

- To move the selection 1 pixel at a time, press the arrow key for the direction in which you want the object to move.

  You can use the above step when you want to make tiny movements of objects.

- To move the selection 10 pixels at a time, press Shift+arrow key.

  You can use the above step to make significant movement of objects.

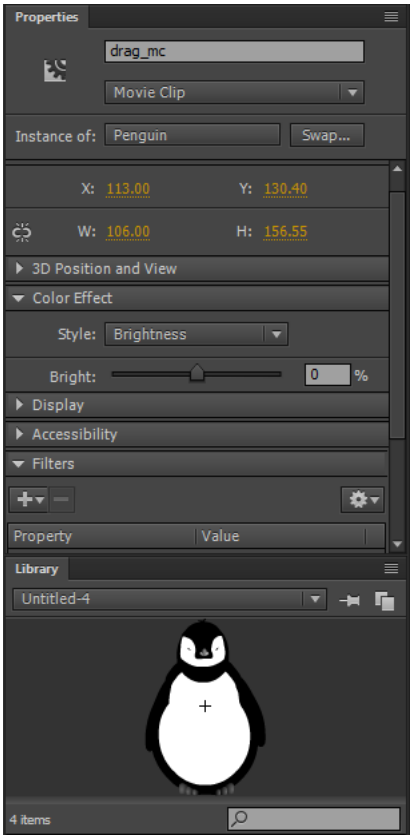
Note:

When Snap To Pixels is selected, the arrow keys move objects by pixel increments on the document's pixel grid, not by pixels on the screen.

Move objects by using the Property inspector

1 Select an object or multiple objects.

2 If the Property inspector is not visible, select Window > Properties.



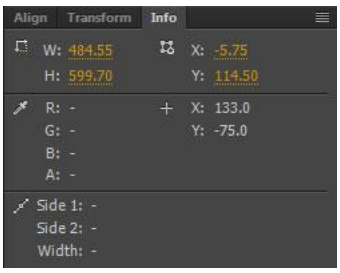
3 Enter *x* and *y* values for the location of the upper-left corner of the selection.

The units are relative to the upper-left corner of the Stage.

Move objects by using the Info panel

1 Select an object or multiple objects.

2 If the Info Panel is not visible, select Window > Info.



3 Enter *x* and *y* values for the location of the upper-left corner of the selection.

The units are relative to the upper-left corner of the Stage.

Cut, copy, or paste objects

To copy or move objects between layers, scenes, or other Animate files, use the cut or copy, followed by paste technique. You can paste an object in a position relative to its original position.

1 Select an object or multiple objects.

2 Select Edit > Cut or select Edit > Copy.

3 Do one of the following:

- To paste the selection in the same position relative to the Stage, select another layer, scene, or file, and then select Edit > Paste In Place.
- To paste the selection in the center of the work area, Select Edit > Paste In Center. You can also select the layer or frame, right-click, and choose Paste in Center.

Copying objects with the clipboard

Elements copied to the clipboard are anti-aliased, so they look as good in other applications as they do in Animate. This feature is useful for frames that include a bitmap image, gradients, transparency, or a mask layer.

Graphics pasted from other Animate documents or programs are placed in the current frame of the current layer. How a graphic element is pasted into an Animate scene depends on the type of element it is, its source, and the preferences you have set:

- Text from a text editor becomes a single text object.
- Vector-based graphics from any drawing program become a group that can be ungrouped and edited.
- Bitmaps become a single grouped object just like imported bitmaps. You can break apart pasted bitmaps or convert pasted bitmaps to vector graphics.

Note:

Before pasting graphics from Illustrator into Animate, convert colors to RGB in Illustrator.

Cloning or duplicating an object

You can clone or duplicate an object.

1 Select an object or multiple objects.

2 You can clone or duplicate an object in one of the following ways:

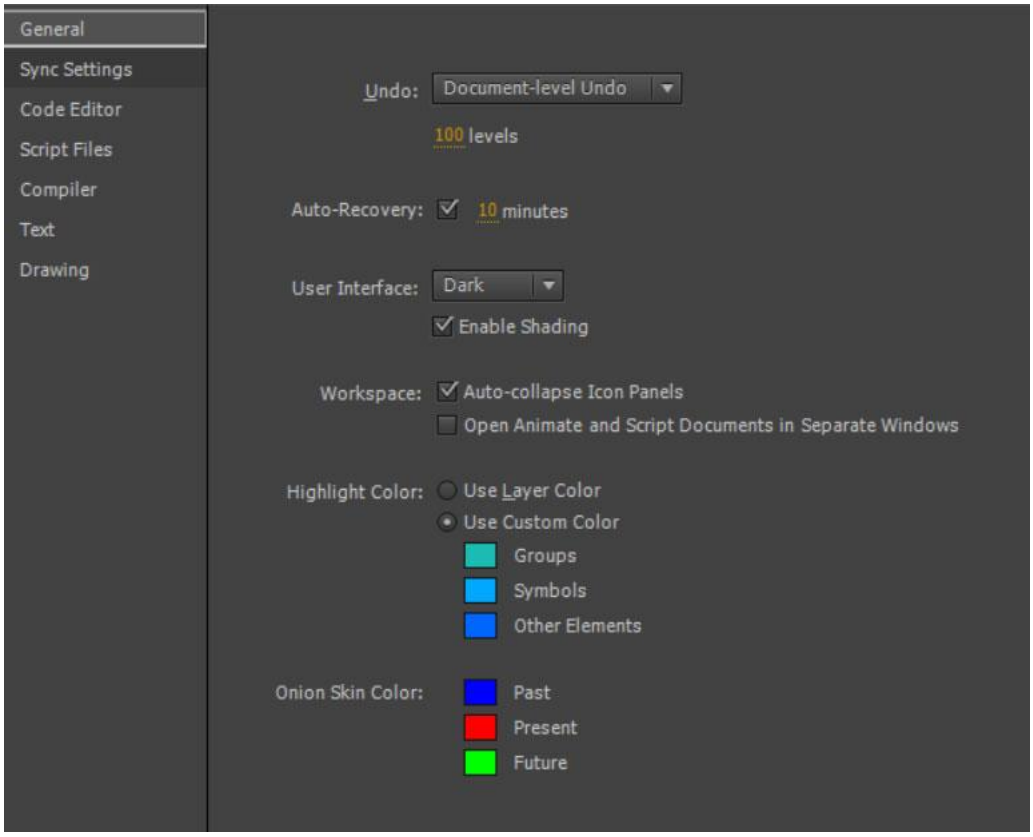
- Use Alt-drag (Windows) or Option-drag (Macintosh).
- Use Ctrl + D keys from the keyboard.
- Click the Duplicate Selection and Transform button in the Transform panel.

Sync Animate Preferences with Creative Cloud

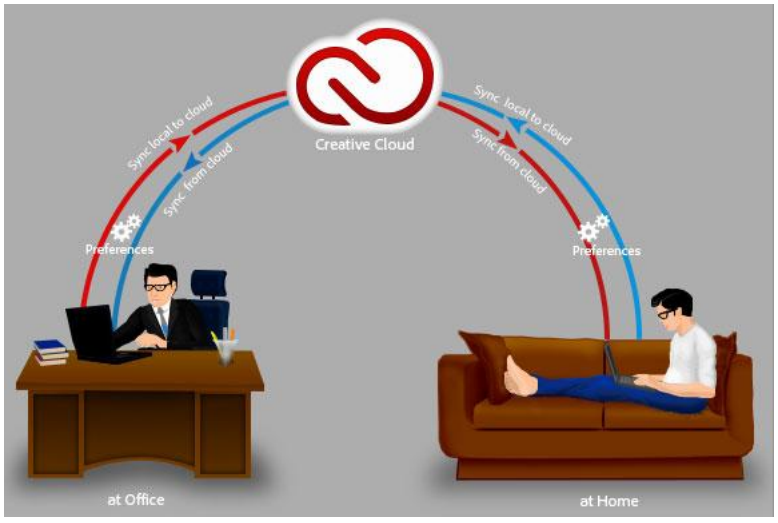
Animate is now fully integrated with Creative Cloud. It allows you to synchronize Preferences to Creative Cloud, first, and across multiple machines (a maximum of two). Besides maintaining a backup on Creative Cloud, the sync preferences feature allows you to restore and reuse preferences despite reinstalling Animate.

The following set of preferences can be synced with the Creative Cloud and across multiple machines:

- **Workspace**: Includes syncing active workspace and user defined workspaces. When downloaded on a different machine, panels retain their positions with appropriate adjustments made according to the screen resolution.
- **Keyboard Shortcuts/custom presets**: Default and customized shortcut keys.
- **Document Properties**: Includes document settings related to Stage.
- **Application Level Preferences**: Includes options set in the following tabs in Preferences panel:
  - **General**
  - **Sync Settings**
  - **Code Editor**
  - **Script files**
  - **Compiler**
  - **Text**
  - **Drawing**
- **Sprite Sheet Preferences**: Output options for Sprite Sheet Generator, including Image Dimension, Algorithm, Data Format, and so on.
- **Grid, Guide, and Snapping Settings**: Grid, Align, Pixels, Objects, Guides, and Snapping options set using View menu in Animate CC.



You can also choose to sync preferences across two different platforms (MAC and Windows). However, due to various differences in the operating systems, there are limitations when syncing across platforms. Certain settings cannot be synced. For example, keyboard shortcuts that include *control* (MAC), are ignored when downloading Preferences on a Windows machine.



Syncing Animate Preferences with Creative Cloud

1 Launch Animate CC.

2 On launching Animate CC for the first time, the Adobe Animate dialog is displayed.

   1 **Begin Syncing:** Click the **Sync Settings Now** button to begin syncing Animate preferences with Creative Cloud.

   2 **Modify Default Sync Settings:** Click **Advanced**. The Sync Settings section of the Preferences Panel is displayed. Review or modify these settings, if necessary.

   3 **Disable Syncing:** Click the **Disable Sync Settings** button to disable syncing Animate preferences with Creative Cloud.

4 At any point in time, if you want to sync with the Creative Cloud, click the button in the Title Bar of Animate CC, and click **Sync Settings Now**.

5 Also, to modify Sync Settings, go to **Edit** > **Preferences** > **Sync Settings**. You can click the Sync Settings Now button to sync the modified settings with Creative Cloud.

Adobe Flash Professional
Flash Professional securely syncs your preferences and settings with Creative Cloud. Click Sync Settings Now to sync settings.
Advanced...
Disable Sync Settings
Sync Settings Now

Downloading Preferences from the Creative Cloud

You can sync Animate Preferences across two systems. You can modify preferences on a computer, sync these modified settings with the Creative Cloud, and download the same on a different computer.

If Preferences on the second computer are default or unmodified, then you can download Preferences from Creative Cloud. When Preferences are downloaded successfully on to a system, the Updated Settings Are Ready dialog is displayed indicating the same.

However, a case of conflict occurs if Preferences are modified without syncing with the Creative Cloud. For more information on how to resolve such conflicts, see Sync Animate Preferences with Creative Cloud.

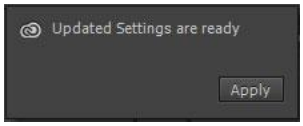
For example, consider that you modified Keyboard Shortcuts on a computer at work and synced it with the Creative Cloud. You can then download and apply these preferences at home on a different computer.

1 Launch Animate CC.

2 In Animate CC, click the button.

3 Click the **Sync Settings Now** button.

4 On the Updated Settings Ready dialog, click Apply to override current preferences with the downloaded copy.



Note:

If you quit Animate before applying the downloaded preferences, they are automatically applied on relaunching the application.

Resolving Conflicts

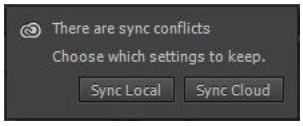
When using multiple machines, you can modify sync settings on any of the machines. However, a case of conflict occurs if you further modify the same settings on a different computer.

For example, consider that you have modified the Sprite Sheet settings on your machine at work (office). You further modify these settings on a machine at home. If the machine at home was not synced with Cloud before modifying Sprite Sheet settings, a case of conflict occurs.

To resolve such a conflict:

1 In Animate CC, click the button.

2 The following dialog box is displayed:



? You can choose to retain local settings or download settings from Creative Cloud by using one of the following options:

Sync Local Sync local settings on this computer to Creative Cloud; overwrite Creative Cloud version with the local version of settings.

Sync Cloud Sync from Creative Cloud to your local computer; ignore changes made to the local settings and replace them with the settings downloaded from Creative Cloud.

Troubleshooting

- Keyboard Shortcuts added to presets with invalid names (names not supported by the OS) are not synced with Creative Cloud.
- Also, Keyboard Shortcuts listed under different menus are not synced across systems of different platforms. For example, Font Mapping command is listed under different Menus in MAC and Windows versions of Animate CC. If Font Mapping is assigned a new keyboard shortcut on MAC and synced with Creative Cloud, it cannot be downloaded and used on Windows.
- Font Settings are not synced with Creative Cloud.
- **Handling Errors:**
  - **No Internet Connection**: If there is no Internet connection, Animate CC throws an error, and Sync Settings cannot be uploaded to or downloaded from Creative Cloud. Ensure that the system is connected to a non-faulty internet connection.
  - **Server is Busy**: If the Creative Cloud server is busy, Animate CC throws an error, and Preferences cannot be synced from the Creative Cloud.
  - **Low Disk Space:** If there is less disk space on the local system, Animate CC throws an error and fails to download Preferences from the Creative Cloud.

Templates

About templates

Animate templates provide you with easy-to-use starting points for common projects. The New File dialog box provides a preview and description of each template. Templates are available in six categories:

- Advertising - these include common Stage sizes used in online ads.
- Animation - these include many common types of animations, including motion, highlighting, glow, and easing.
- Banners - includes common sizes and functionality used in website interfaces.
- Media Playback - includes photo albums and playback of several video dimensions and aspect ratios.
- Presentations - includes simple and more complex presentation styles.
- Sample Files - these provide examples of commonly used features in Animate.

A note about advertising templates

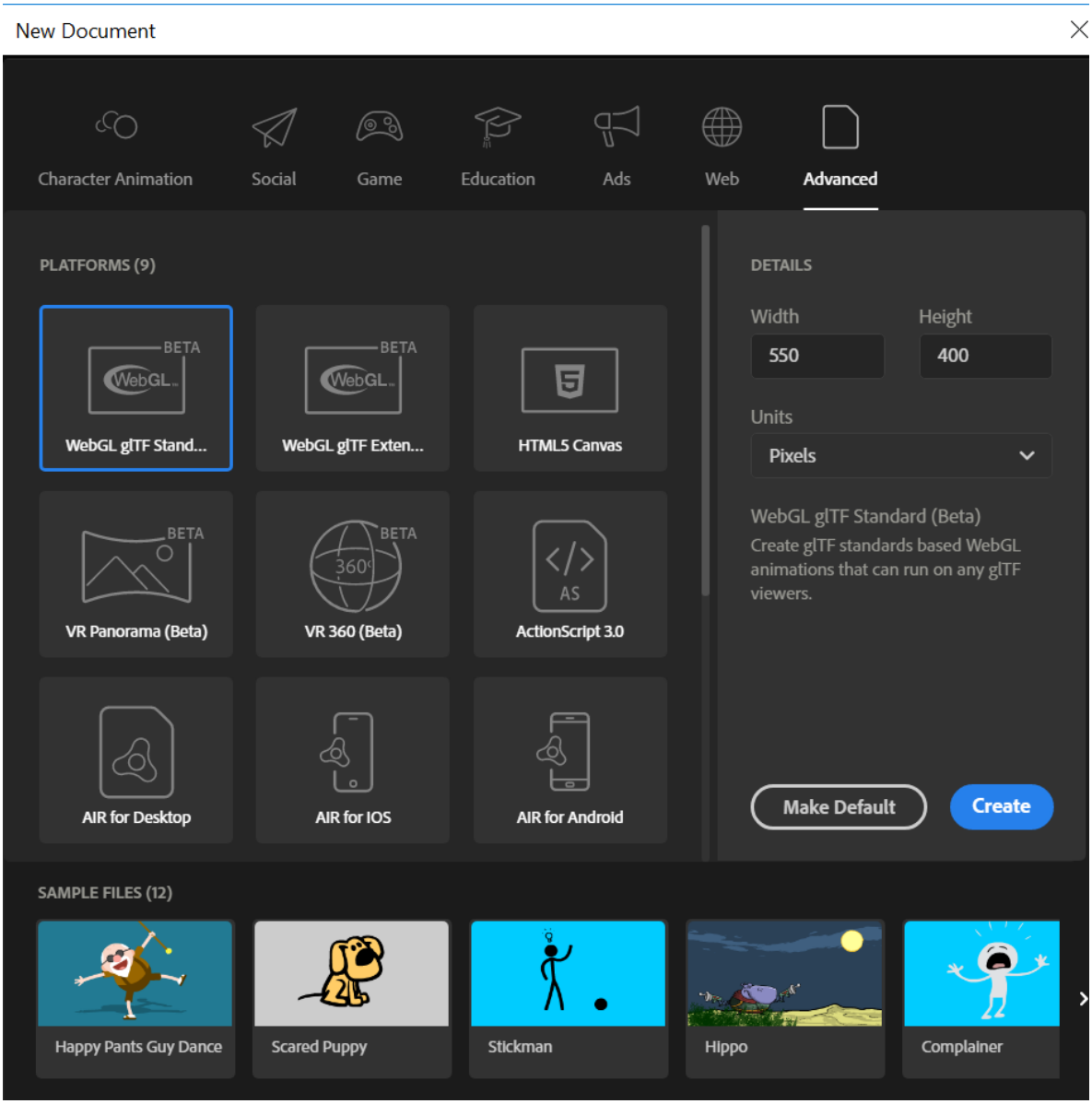
Advertising templates facilitate the creation of standard rich media types and sizes defined by the Interactive Advertising Bureau (IAB) and accepted by the online advertising industry. For more information on IAB-endorsed ad types, see the IAB site at IAB.net.

Test your ads for stability in various browser and platform combinations. Your ad application is considered stable if it doesn't cause error messages, browser crashes, or system crashes.

Work with webmasters and network administrators to create detailed test plans that include the tasks you expect your audience to do within the ad. Example test plans are available at the IAB Rich Media testing section of IAB.net. Size and file format requirements of ads can vary by vendor and website. Check with your vendor, ISP, or the IAB to learn about these requirements that affect the ad's design.

Use a template

1 Select File > New.



New Document

2 In the New File dialog box, click the Templates tab.

3 Select a template from one of the categories and click OK.

4 Add content to the FLA file that opens.

5 Save and publish the file.

Find and Replace in Animate

About Find and Replace

The Find and Replace feature lets you do the following:

- Search for a text string, a font, a color, a symbol, a sound file, a video file, or an imported bitmap file.
- Replace the specified element with another element of the same type. Different options are available in the Find and Replace dialog box depending on the type of specified element.
- Find and replace elements in the current document or the current scene.
- Search for the next occurrence or all occurrences of an element, and replace the current occurrence or all occurrences.

Note:

In a screen-based document, you can find and replace elements in the current document or the current screen, but you can't use scenes.

The Live Edit option lets you edit the specified element directly on the Stage. If you use Live Edit when searching for a symbol, Animate opens the symbol in edit-in-place mode.

The Find and Replace Log at the bottom of the Find and Replace dialog box shows the location, name, and type of the elements for which you are searching.

Find and replace text

1. Select Edit > Find and Replace.
2. Select Text from the For pop-up menu.
3. In the Text box, enter the text to find.
4. In the Replace With Text box, enter the text to replace the existing text.
5. Select options for searching text:

   Whole Word Searches for the specified text string as a whole word only, bounded on both sides by spaces, quotes, or similar markers. When Whole Word is deselected, the specified text can be searched as part of a larger word. For example, when Whole Word is deselected, a search for *place* will yield the words *replace*, *placement*, and so on.

   Match Case Searches for text that exactly matches the case (uppercase or lowercase character formatting) of the specified text when finding and replacing.

   Regular Expressions Searches for text in regular expressions in ActionScript. An expression is any statement that Flash Professional can evaluate that returns a value.

   Text Field Contents Searches the contents of a text field.

   Frames/Layers/Parameters Searches frame labels, layer names, scene names, and component parameters.

   Strings in ActionScript Searches strings (text between quotation marks) in ActionScript in the document or scene (external ActionScript files are not searched).

   ActionScript Searches all ActionScript, including code and strings.
6. To select the next occurrence of the specified text on the Stage and edit it in place, select Live Edit.

   Note:

   Only the next occurrence is selected for live editing, even if you select Find All in step 7.
7. To find text, do one of the following:
   - To find the next occurrence of the specified text, click Find Next.

- To find all occurrences of the specified text, click Find All.

8 To replace text, do one of the following:

- To replace the currently selected occurrence of the specified text, click Replace.
- To replace all occurrences of the specified text, click Replace All.

Find and replace fonts

1 Select Edit > Find and Replace.

2 Select Font from the For pop-up menu, then select from the following options:

- To search by font name, select Font Name and select a font from the pop-up menu or enter a font name in the box. When Font Name is deselected, all fonts in the scene or document are searched.
- To search by font style, select Font Style and select a font style from the pop-up menu. When Font Style is deselected, all font styles in the scene or document are searched.
- To search by font size, select Font Size and enter values for minimum and maximum font size to specify the range of font sizes to be searched. When Font Size is deselected, all font sizes in the scene or document are searched.
- To replace the specified font with a different font name, select Font Name under Replace With and select a font name from the pop-up menu or enter a name in the box. When Font Name is deselected under Replace with, the current font name remains unchanged.
- To replace the specified font with a different font style, select Font Style under Replace With and select a font style from the pop-up menu. When Font Style is deselected under Replace with, the current style of the specified font remains unchanged.
- To replace the specified font with a different font size, select Font Size under Replace With and enter values for minimum and maximum font size. When Font Size is deselected under Replace With, the current size of the specified font remains unchanged.

3 To select the next occurrence of the specified font on the Stage and edit it in place, select Live Edit.

Note:

Only the next occurrence is selected for live editing, even if you select Find All in step 4.

4 To find a font, do one of the following:

- To find the next occurrence of the specified font, click Find Next.
- To find all occurrences of the specified font, click Find All.

5 To replace a font, do one of the following:

- To replace the currently selected occurrence of the specified font, click Replace.
- To replace all occurrences of the specified font, click Replace All.

Find and replace colors

You cannot find and replace colors in grouped objects.

Note:

To find and replace colors in a GIF or JPEG file in a Flash Professional document, edit the file in an image-editing application.

1 Select Edit > Find and Replace.

2 Select Color from the For pop-up menu.

3 To search for a color, click the Color control and do one of the following:

- Select a color swatch from the color pop-up window.
- Enter a hexadecimal color value in the Hex Edit box in the color pop-up window.
- Click the System Color Picker button and select a color from the system color picker.
- To make the eyedropper tool appear, drag from the Color control. Select any color on your screen.

4 To select a color to replace the specified color, click the Color control under Replace With and do one of the following:

- Select a color swatch from the color pop-up window.
- Enter a hexadecimal color value in the Hex Edit box in the color pop-up window.
- Click the System Color Picker button and select a color from the system color picker.
- To make the eyedropper tool appear, drag from the Color control. Select any color on your screen.

5 To specify which occurrence of the color to find and replace, select the Fills, Strokes, or Text option or any combination of those options.

6 To select the next occurrence of the specified color on the Stage and edit it in place, select Live Edit.

Note:

Only the next occurrence is selected for live editing, even if you select Find All in the next step.

7 Find a color.

- To find the next occurrence of the specified color, click Find Next.
- To find all occurrences of the specified color, Click Find All.

8 Replace a color.

- To replace the currently selected occurrence of the specified color, click Replace.
- To replace all occurrences of the specified color, click Replace All.

Find and replace symbols

To find and replace symbols, search for a symbol by name. Replace a symbol with another symbol of any type—movie clip, button, or graphic.

1 Select Edit > Find and Replace.

2 Select Symbol from the For pop-up menu.

3 For Name, select a name from the pop-up menu.

4 Under Replace With, for Name select a name from the pop-up menu.

5 To select the next occurrence of the specified symbol on the Stage and edit it in place, select Live Edit.

Note:

Only the next occurrence is selected for editing, even if you select Find All in the next step.

6 To find a symbol, do one of the following:

- To find the next occurrence of the specified symbol, click Find Next.
- To find all occurrences of the specified symbol, click Find All.

7 To replace a symbol, do one of the following:

- To replace the currently selected occurrence of the specified symbol, click Replace.
- To replace all occurrences of the specified symbol, click Replace All.

Find and replace sound, video, or bitmap files

1 Select Edit > Find and Replace.

2 Select Sound, Video, or Bitmap from the For pop-up menu.

3 For Name, enter a sound, video, or bitmap filename or select a name from the pop-up menu.

4 Under Replace With, for Name enter a sound, video, or bitmap filename or select a name from the pop-up menu.

5 To select the next occurrence of the specified sound, video, or bitmap on the Stage and edit it in place, select Live Edit.

Note:

Only the next occurrence is selected for editing, even if you select Find All in the next step.

6 Find a sound, video, or bitmap.

- To find the next occurrence of the specified sound, video, or bitmap, click Find Next.
- To find all occurrences of the specified sound, video, or bitmap, click Find All.

7 Replace a sound, video, or bitmap.

- To replace the currently selected occurrence of the specified sound, video, or bitmap, click Replace.
- To replace all occurrences of the specified sound, video, or bitmap, click Replace All.

"Undo, redo, and the History panel"

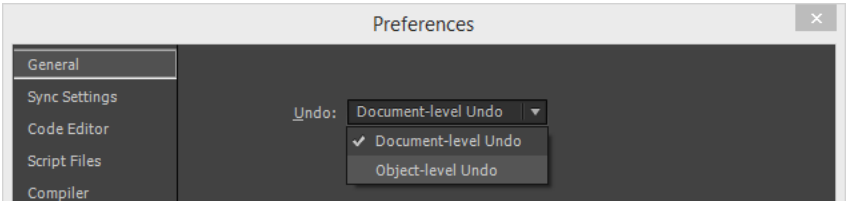
Undo, Redo, and Repeat commands

To undo or redo actions on individual objects, or all objects within the current document, specify either object-level or document-level Undo and Redo commands (Edit > Undo or Edit Redo). The default behavior is document-level Undo and Redo.

To choose Object-level or document-level undo options, do the following:

1 In Animate CC, select Edit > Preferences.

2 On the General tab, select Object-level Undo from the Undo drop-down.



Note that, you cannot undo some actions when using object-level Undo. Among these are entering and exiting Edit mode; selecting, editing, and moving library items; and creating, deleting, and moving scenes.

To reapply a step to the same object or to a different object, use the Repeat command. For example, if you move a shape named shape_A, select Edit > Repeat to move the shape again, or select another shape, shape_B, and select Edit > Repeat to move the second shape by the same amount.

By default, Animate supports 100 levels of undo for the Undo menu command. Select the number of undo and redo levels, from 2 to 300, in Animate Preferences.

By default, when you undo a step by using Edit > Undo or the History panel, the file size of the document does not change, even if you delete an item in the document. For example, if you import a video file into a document, and undo the import, the file size of the document still includes the size of the video file. Any items that you delete from a document when performing an Undo command are preserved to in order to be able to restore the items with a Redo command.

Using the History panel

The History panel (**Window** > **History**) shows a list of the steps you've performed in the active document since you created or opened that document, up to a specified maximum number of steps. (The History panel doesn't show steps you've performed in other documents.) The slider in the History panel initially points to the last step that you performed.

- To undo or redo individual steps or multiple steps at once, use the History panel. Apply steps from the History panel to the same object or to a different object in the document. However, you cannot rearrange the order of steps in the History panel. The History panel is a record of steps in the order in which they are performed.

  note: If you undo a step or a series of steps and then do something new in the document, you can no longer redo the steps in the History panel; they disappear from the panel.

- By default, Animate supports 100 levels of undo for the History panel. Select the number of undo and redo levels, from 2 to 300, in Animate Preferences.
- To erase the history list for the current document, clear the History panel. After clearing the history list, you cannot undo the steps that are cleared. Clearing the history list does not undo steps; it removes the record of those steps from the current document's memory.

Closing a document clears its history. To use steps from a document after that document is closed, copy the steps with the Copy Steps command or save the steps as a command.

Undo steps with the History panel

When you undo a step, the step is dimmed in the History panel.

- To undo the last step performed, drag the History panel slider up one step in the list.
- To undo multiple steps at once, drag the slider to point to any step, or click to the left of a step along the path of the slider. The slider scrolls automatically to that step, undoing all subsequent steps as it scrolls.

***note**: Scrolling to a step (and selecting the subsequent steps) is different from selecting an individual step. To scroll to a step, click to the left of the step.*

Replay steps with the History panel

When you replay steps with the History panel, the steps that play are the steps that are selected (highlighted) in the History panel, not necessarily the step currently indicated by the slider.

Apply steps in the History panel to any selected object in the document.

Replay one step

? In the History panel, select a step and click the Replay button.

Replay a series of adjacent steps

1 Select steps in the History panel by doing one of the following:

- Drag from one step to another. (Don't drag the slider; drag from the text label of one step to the text label of another step.)
- Select the first step, then Shift-click the last step; or select the last step and Shift-click the first step.

2 Click Replay. The steps replay in order, and a new step, labeled Replay Steps, appears in the History panel.

Replay nonadjacent steps

1 Select a step in the History panel, and Control-click (Windows) or Command-click (Macintosh) other steps. To deselect a selected step, Control-click or Command-click.

2 Click Replay.

Copy and paste steps between documents

Each open document has its own history of steps. To copy steps from one document and paste them into another, use the Copy Steps command in the History panel options menu. If you copy steps into a text editor, the steps are pasted as JavaScript™ code.

1 In the document containing the steps to reuse, select the steps in the History panel.

2 In the History panel options menu, select Copy Steps.

3 Open the document to paste the steps into.

4 Select an object to apply the steps to.

5 Select Edit > Paste to paste the steps. The steps play back as they're pasted into the document's History panel. The History panel shows them as only one step, called Paste Steps.

Keyboard shortcuts

Copy the current shortcut set to clipboard

1 Select Edit > Keyboard Shortcuts (Windows) or Animate > Keyboard Shortcuts (Macintosh).

2 Click the Copy to Clipboard button. You can then paste the keyboard shortcut set in any text editor for reference or printing.

Create and modify custom keyboard shortcuts

You can create and modify keyboard shortcuts in Animate.

Customize keyboard shortcuts

1 Select (Windows) Edit > Keyboard Shortcuts or (Macintosh) Animate > Keyboard Shortcuts .

The Keyboard Shortcuts dialog box appears.

2 Use the following options to add, delete, or edit keyboard shortcuts:

Keyboard Layout Presets Lets you choose a preset of predetermined shortcuts from the drop-down, or any custom set you may have defined.

Search Lets you search for any command whose shortcut you want to set or modify. Alternatively, you may drill-down the command within the tree view of commands.

Match Case Lets you perform a case-sensitive search of the command.

Add Adds a new shortcut to the selected command. To add a new keyboard shortcut for the selected command, click Add and enter a new key combination. Each command can one keyboard shortcut each; if a shortcut is already assigned to a command, the Add button is disabled.

Undo Undo the last set shortcut for a command.

Copy to clipboard Copy the entire list of keyboard shortcuts to clipboard of your Operating System.

Go To Conflict Navigates to conflicting command. In case of a conflict when setting up a shortcut, a warning message is displayed.

Save shortcuts to a preset Save the entire set of shortcuts to a preset. Preets can then be selected from the *Keyboard Layout Presets* drop-down.

Delete Shortcut Deletes a selected shortcut.

Note:

You cannot use single keys such as delete or page up, ones that are pre-defined for some generic tasks such as deleting content, page scrolling, etc.

3 Click OK.

Remove a shortcut from a command

1 From the Commands pop-up menu, select a command category, select a command from the Commands list.

2 Click the X mark beside the shortcut.

Add a shortcut to a command

1 From the Commands pop-up menu, select a command category and select a command.

2 Click the Add button.

3 Press a key combination.

Note:

If a conflict occurs with the key combination (for example, if the key combination is already assigned to another command), an explanatory message appears just below the Commands list. Click the Go To Conflict button to quickly navigate to the conflicting command, and change the shortcut.

4 Click Ok.

Edit an existing shortcut

1 From the Commands pop-up menu, select a command category, select a command from the Commands list.

2 Double-click the shortcut.

3 Press a new key combination.

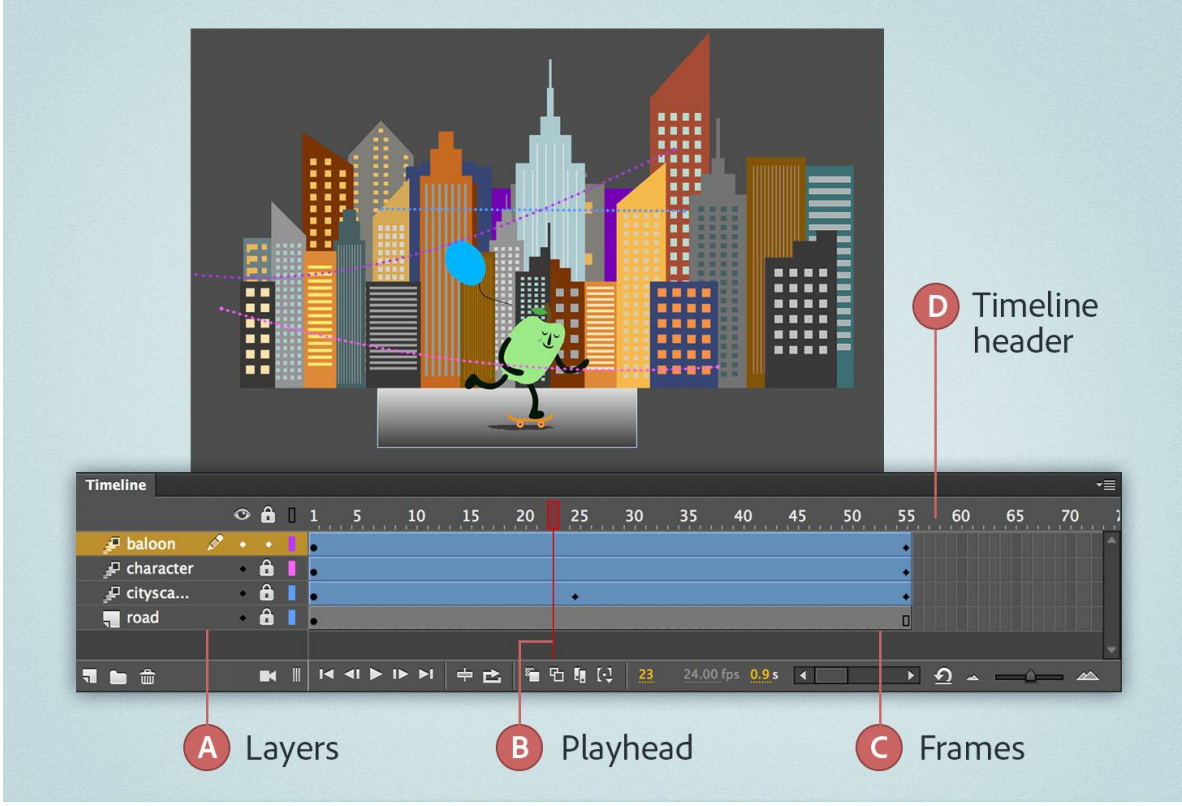
Note:

If a conflict occurs with the key combination (for example, if the key combination is already assigned to another command), an explanatory message appears just below the Commands list. Click the Go To Conflict button to quickly navigate to the conflicting command, and change the shortcut.

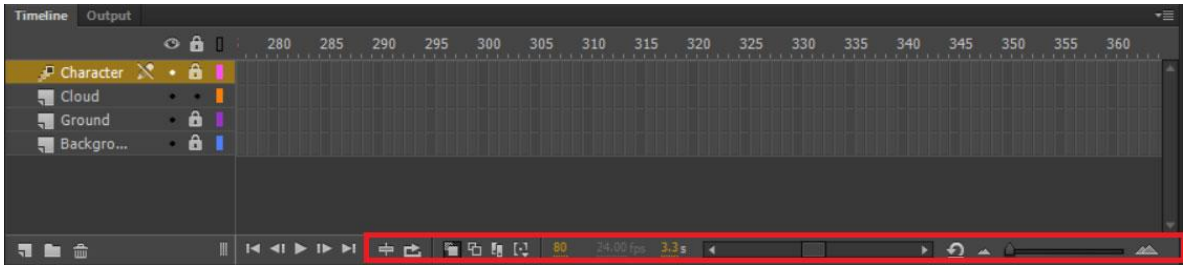
How to use the timeline in Animate

About the timeline

The timeline in Adobe Animate CC organizes and controls a document's content over time in layers and frames. Like a movie film, Animate documents divide lengths of time into frames. Layers are like multiple filmstrips stacked on top of one another, each containing a different image that appears on the Stage. The major components of the Timeline are layers, frames, and the playhead.



The timeline shows where animation occurs in a document, including frame-by-frame animation, tweened animation, and motion paths. Controls in the layers section of the timeline let you hide, show, lock, or unlock layers, and display layer content as outlines. You can drag timeline frames to a new location on the same layer or to a different layer.



Note:

When an animation is played, the actual frame rate is displayed. This frame rate can differ from the document's frame rate setting if the computer cannot calculate and display the animation quickly.

Onion skinning

Do one of the following:

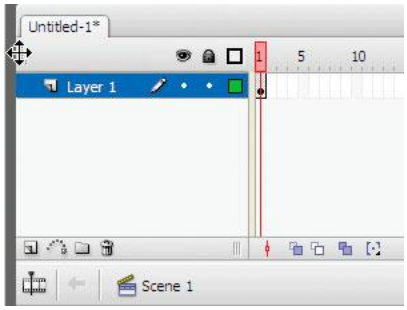
- Select the Onion skin icon (the icon to the left of the Loop icon) in the timeline. All frames between the Start Onion Skin and End Onion Skin markers (in the timeline header) are superimposed as one frame in the Document window.
- Select to display onion skinned frames as outlines.

For more information, see Use onion skinning

Changing the appearance of the timeline

By default, the timeline appears below the main document window. To change its position, detach the timeline from the document window and float it in its own window. You can dock it to any other panel of your choice. You can also hide the timeline.

To change the number of layers and frames that are visible, resize the timeline. To view extra layers when the timeline contains more layers than can be displayed, use the scroll bars on the right side of the timeline.



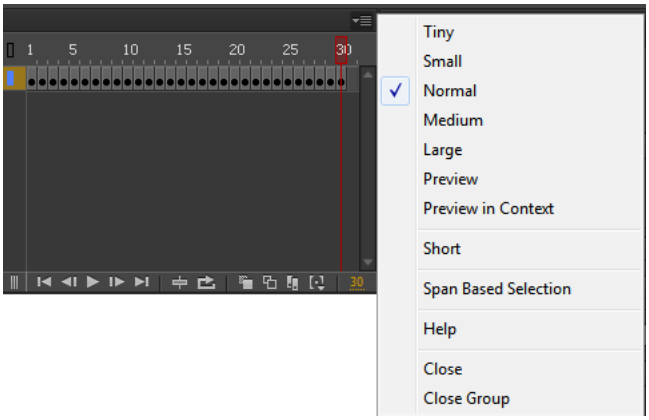
Dragging the Timeline

- To move the timeline when it is docked to the document window, drag the title bar tab at the upper-left corner of the timeline.
- To dock an undocked timeline to the application window, drag the title bar tab to the top or bottom of the document window.

- To dock an undocked timeline to other panels, drag the timeline title bar tab to the location you choose. To prevent the timeline from docking to other panels, press control key while you drag. A blue bar appears to indicate where the timeline will dock.
- To lengthen or shorten layer name fields in the timeline panel, drag the bar separating the layer names and the frames portions of the timeline.

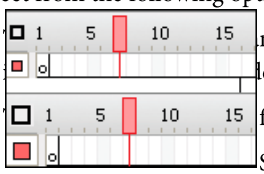
Customizing the timeline view

1 To display the Frame View pop-up menu, click Frame View in the upper-right corner of the Timeline.



Frame View pop-up menu.

2 Select from the following options:

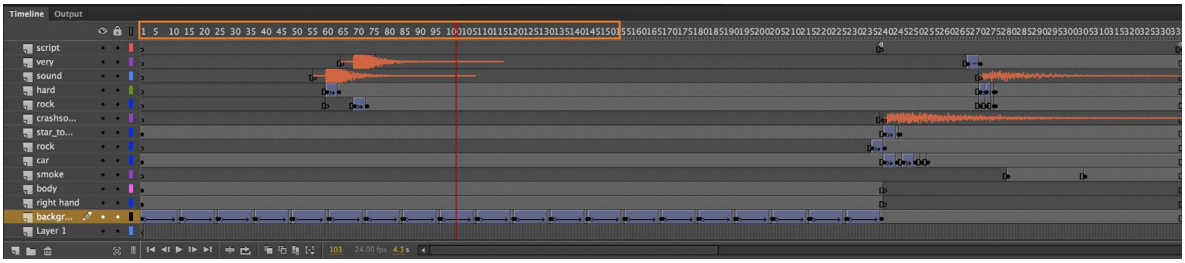
- 

me cells, select Tiny, Small, Normal, Medium, or Large. (The Large frame-width setting letails of sound waveforms.)
-

frame cell rows, select Short.

Short and Normal frame view options.

- To turn the tinting of frame sequences on or off, select **Tinted Frames**.
- To display thumbnails of the content of each frame scaled to fit the timeline frames, select **Preview**. This preview can cause the apparent content size to vary and requires extra screen space.
- To display thumbnails of each full frame (including empty space), select **Preview In Context**. This preview is useful for viewing the way elements move in their frames over the course of the animation.
- To customize the number of frames in the timeline view, use the **Resize timeline view** slider bar. You can also use **Fit less frames in view** or **Fit more frames in view** button available next to the **Resize timeline view** slider bar.
- Use **Reset timeline zoom to the default level** button to reset the view to the default level.



Timeline zoom

Change layer height in the timeline

1 Do one of the following:

- Double-click the layer's icon (the icon to the left of the layer name) in the timeline.
- Right-click (Windows) or Control-click (Macintosh) the layer name and select **Properties** from the context menu.
- Select the layer in the timeline and select **Modify > Timeline > Layer Properties**.

2 In the **Layer Properties** dialog box, select an option for layer height and click **OK**.

Set layer transparency

Do one of the following:

- To set the visibility to transparent, use **shift+click** the eye column in the timeline.
- Double-click the layer's icon (the icon to the left of the layer name) in the Timeline.
- Right-click (Windows) or **Control+click** (Macintosh) the layer name and select **Properties** from the context menu. In the **Layer Properties** dialog box, select **Visibility>Transparent.**
- Right-click (Windows) or **Control+click** (Macintosh) the layer name and select **Show Others as Transparent.**

Resize the timeline panel

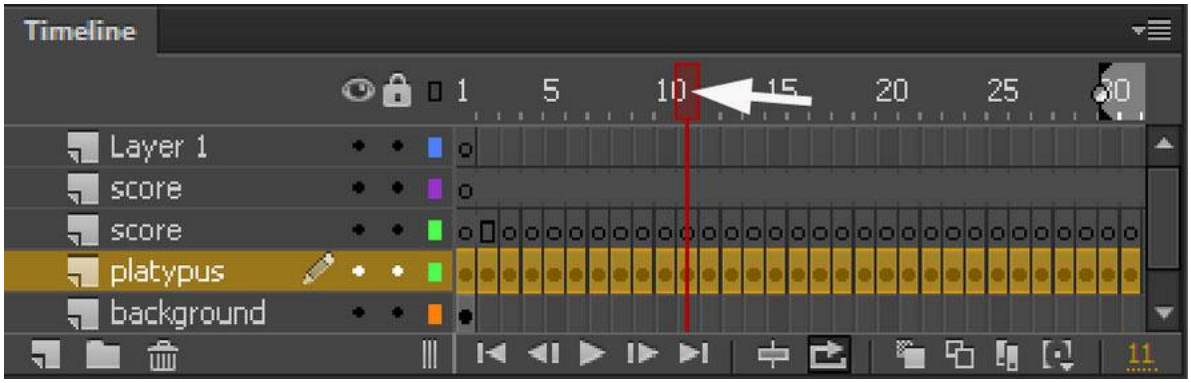
- If the timeline is docked to the main application window, drag the bar separating the timeline from the stage area.
- If the timeline is not docked to the main application window, drag the lower-right corner (Windows) or the size box in the lower-right corner (Macintosh).

Moving the playhead

The red playhead at the top of the timeline moves as a document plays to indicate the current frame displayed on the Stage. The timeline header shows the frame numbers of the animation. To display a frame on the stage, move the playhead to the frame in the timeline.

To display a specific frame when you are working with many frames, move the playhead along the timeline.

- To go to a frame, click the frame's location in the timeline header, or drag the playhead to the desired position.
- To center the timeline on the current frame, click the Center Frame button at the bottom of the timeline.
- With the loop option turned on in the timeline, you can now loop streaming audio within a range of frames along with other animations.



Moving the playhead

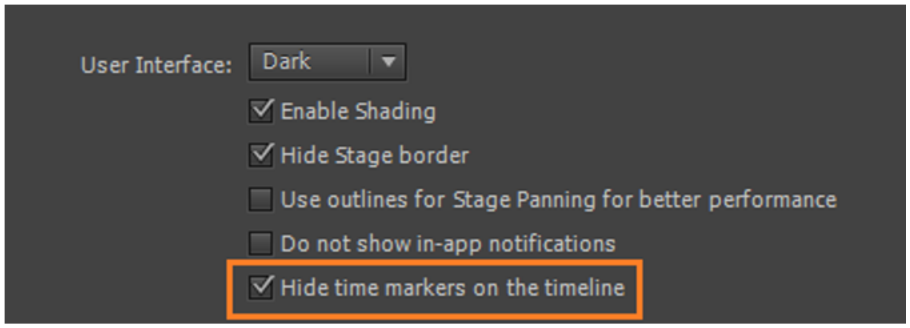
Viewing time along with frames

The timeline displays the time in seconds along with the frame numbers. This feature allows faster conversion from frames to time and also keeps you aware of the frames per second (fps) value you have set throughout the animation process.

In the following screenshot, the timeline displays 20 frames per second (fps):

Viewing time along with frames

You can also hide the time markers on the timeline. Go to **Edit > Preferences > General** and select **Hide time markers on the timeline.**



Option to hide time markers on timeline

Managing animation speed

You can manage animation speed by scaling the frame spans, by animating based on time intervals, or you can extend and compress animations by using time controls.

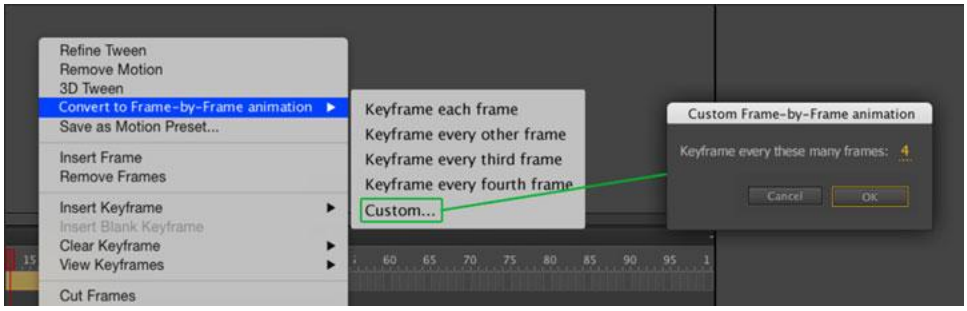
Scale the frame spans

You can change frames per second (fps) for your animation without having to change the animation speed. Use the **Scale Frame Spans** option as you change fps to keep the time intact.

Option to scale frame spans

Animating based on time intervals

Turn your frame spans into **1s**, **2s**, **3s** or to any desired interval. This feature works on classic tween span, shape tween span, motion tween span, keyframe span, or on a blank keyframe span.



Custom frame by frame animation based on specific time intervals.

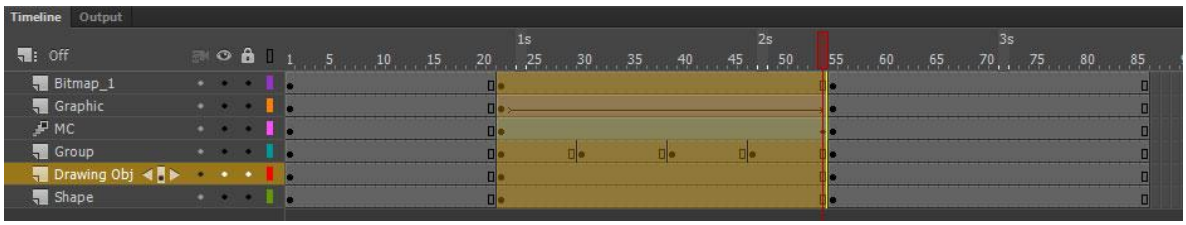
Convert to Frame-by-Frame animation option is available in **Modify** menu. You can also assign your desired keys in keyboard shortcut dialog to perform these tasks.

Extend or compress animations using timeline controls

You can extend or reduce time for the selected span on the timeline. Select the frame span and drag the right-side edge of the selected span on timeline, forward or backward. The frames within the timeline are adjusted automatically.

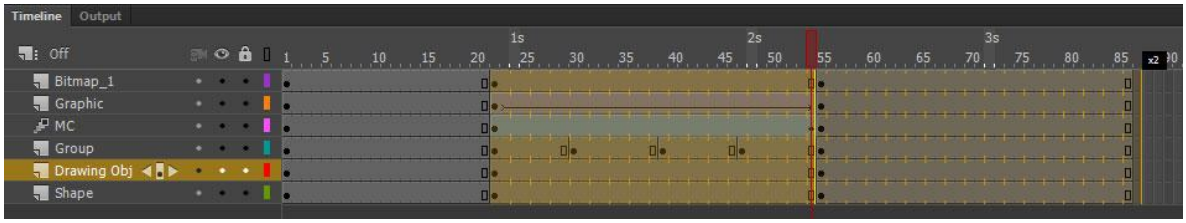
You can replicate your animations multiple times (x2, x3, and so on) by dragging the spans in timeline. You can also compress the frames to their normal position, after extending them.

Select the frames in timeline, click, and drag the highlighted right-side edge of the selection.



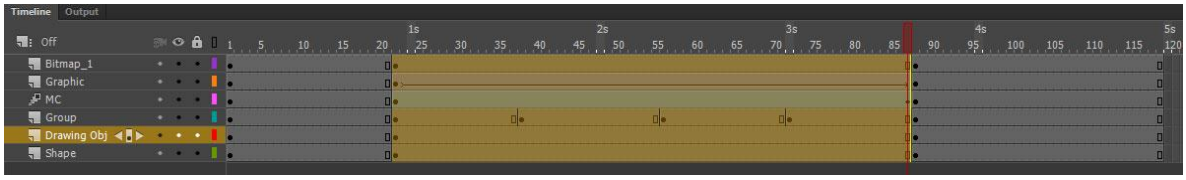
Frame selection and border

While dragging, as shown in the following screenshot, you can view the animation in multiples such as **x2**, **x3**, and so on.



Display of stretched frames while dragging.

In the following screenshot, you can view the extended span in multiple of **x2**. x2 is double the size of a selected span. x3 is three times the original size of a span.

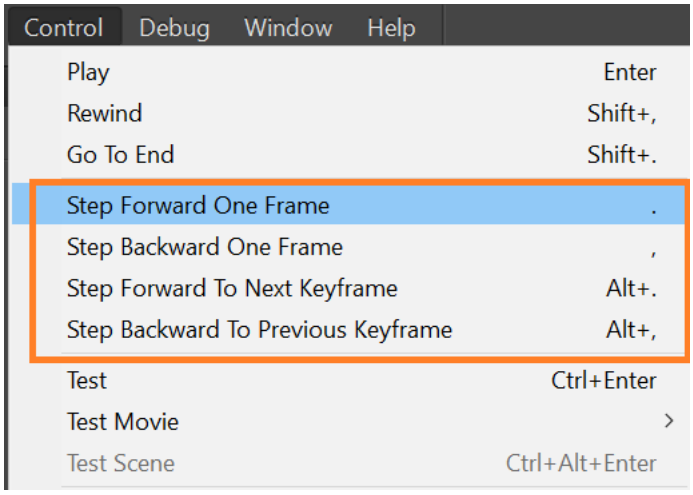


Extended spans after dragging.

Navigating in timeline

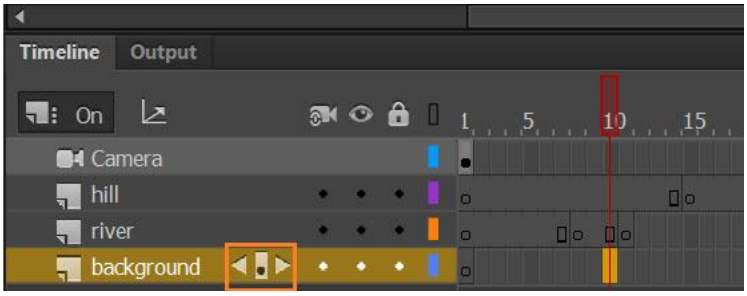
Keyframe navigation

You can navigate between keyframes on the active layer using the **Control** menu. You can also use **Alt+.** or **Alt+,** to move forward and backward to next or previous keyframes respectively in the timeline.



Keyframe navigation options with keyboard shortcuts

You can navigate between keyframes on the active layer using the left and right controls on the layer. Also, you can use the menu and keyboard shortcuts.



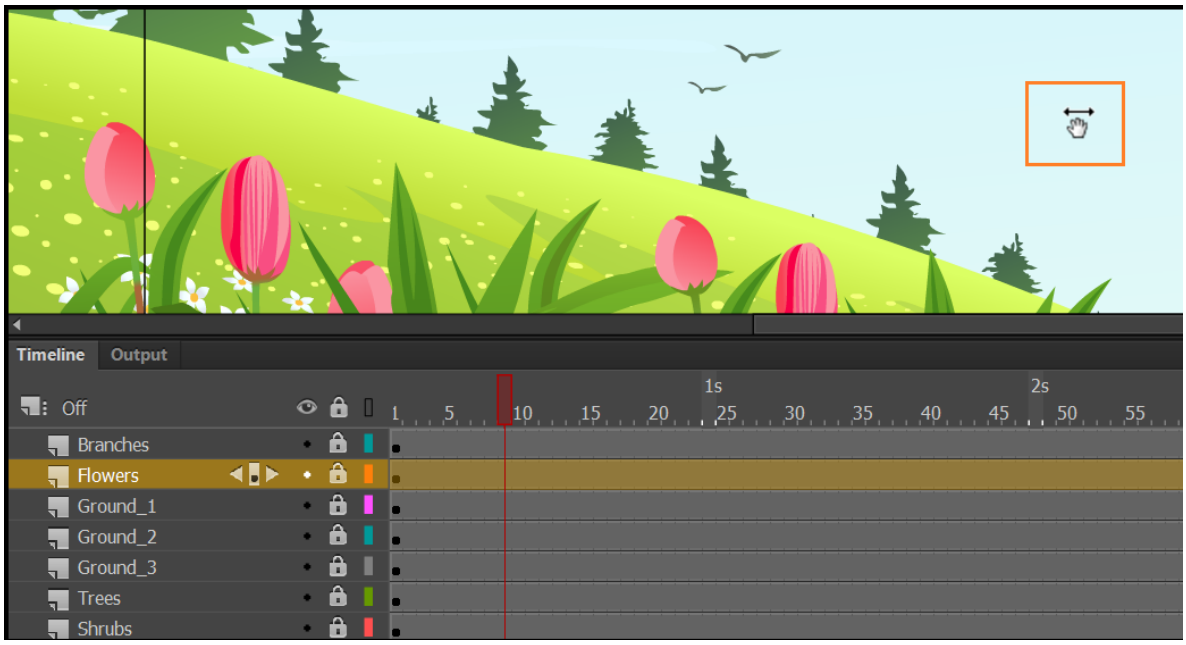
Timeline displaying left and right controls on layer

Note:

You can use page navigation shortcuts such as ***Alt+Shift+,*** *for backward and* ***Alt+Shift+.*** *for forward navigation.*

Panning through timeline from stage

Now you can scrub the timeline right from the stage using the new time scrub tool. This tool is grouped with the hand tool in tools panel. You can also use **spacebar+T** keyboard shortcut to temporarily enable this tool. Drag left or right to view the timeline in the direction of pan.



Display of time scrub tool

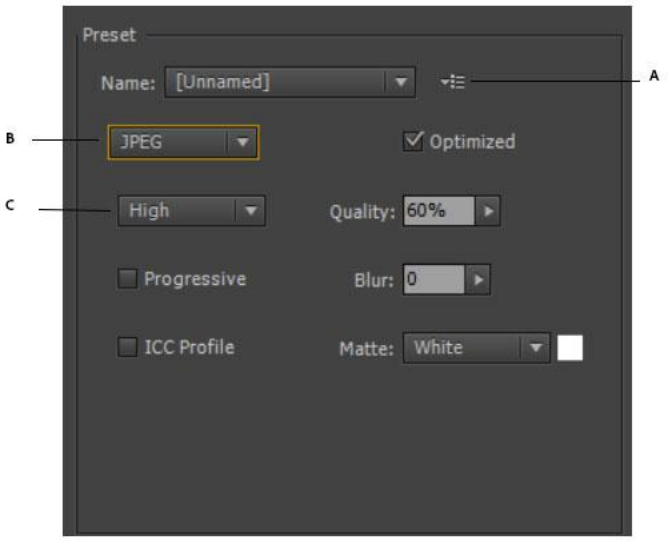
Optimization options for Images and Animated GIFs

Web graphic formats

Web graphics formats can be either bitmap (raster) or vector. The bitmap formats—GIF, JPEG, and PNG—are resolution-dependent, meaning that a bitmap image's dimensions, and possibly image quality, will change at different monitor resolutions. The vector formats—SVG and SWF—are resolution-independent and can be scaled up or down without losing any image quality. The vector formats can also include raster data.

JPEG optimization options

JPEG is the standard format for compressing continuous-tone images such as photographs. Optimizing an image as a JPEG format relies on lossy compression, which selectively discards data.



Optimization settings A. File Format menu B. Compression Quality menu C. Optimize menu

Quality Determines the level of compression. The higher the Quality setting, the more detail the compression algorithm preserves. However, using a high Quality setting results in a larger file size than using a low Quality setting. View the optimized image at several quality settings to determine the best balance of quality and file size.

Optimized Creates an enhanced JPEG with a slightly smaller file size. The Optimized JPEG format is recommended for maximum file compression; however, some older browsers do not support this feature.

Progressive Displays the image progressively in a web browser. The image appears as a series of overlays, enabling viewers to see a low-resolution version of the image before it downloads completely. The Progressive option requires use of the Optimized JPEG format.

Note:

Progressive JPEGs require more RAM for viewing and are not supported by some browsers.

Blur Specifies the amount of blur to apply to the image. This option applies an effect identical to that of the Gaussian Blurfilter and allows the file to be compressed more, resulting in a smaller file size. A setting of 0.1 to 0.5 is recommended.

Embed Color Profile (Photoshop) or ICC Profile (Illustrator) Preserves color profiles in the optimized file. Some browsers use color profiles for color correction.

Matte Specifies a fill color for pixels that were transparent in the original image. Click the Matte color swatch to select a color in the color picker, or select an option from the Matte menu: Eyedropper Color (to use the color in the eyedropper sample box), Foreground Color,Background Color, White, Black, or Other (to use the color picker).

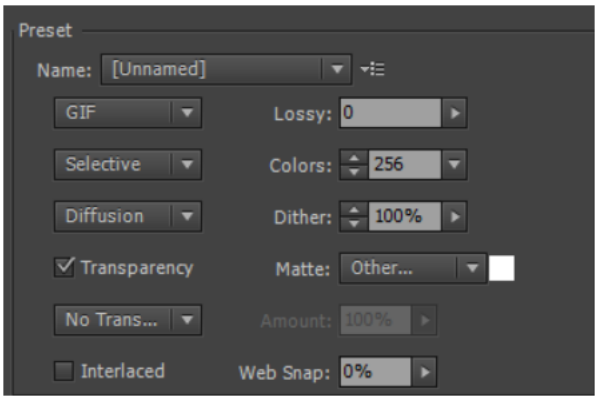
Pixels that were fully transparent in the original image are filled with the selected color; pixels that were partially transparent in the original image are blended with the selected color.

GIF and PNG-8 optimization options

GIF is the standard format for compressing images with flat color and crisp detail, such as line art, logos, or illustrations with type. Like the GIF format, the PNG-8 format efficiently compresses solid areas of color while preserving sharp detail.

PNG-8 and GIF files support 8-bit color, so they can display up to 256 colors. The process of determining which colors to use is called indexing, so images in GIF and PNG-8 formats are sometimes called indexed color images. To convert an image to indexed color, a color lookup table is built to store and index the colors in the image. If a color in the original image does not appear in the color lookup table, the application either chooses the closest color in the table or simulates the color using a combination of available colors.

In addition to the following options, you can also adjust the number of colors in the image's color table. See Customize the color table for GIF and PNG-8 images.



GIF options

Lossy (GIF only) Reduces file size by selectively discarding data. A higher Lossy setting results in more data being discarded. You can often apply a Lossy value of 5–10, and sometimes up to 50, without degrading the image. The Lossy option can reduce file size by 5% to 40%.

Note:

You cannot use the Lossy option with the Interlaced option or with Noise or Pattern Dither algorithms.

Color Reduction Method and Colors Specifies a method for generating the color lookup table and the number of colors you want in the color lookup table. You can select one of the following color reduction methods:

Perceptual Creates a custom color table by giving priority to colors for which the human eye has greater sensitivity.

Selective Creates a color table similar to the Perceptual color table, but favoring broad areas of color and the preservation of web colors. This color table usually produces images with the greatest color integrity. Selective is the default option.

Adaptive Creates a custom color table by sampling colors from the predominant spectrum in the image. For example, an image with only the colors green and blue produces a color table made primarily of greens and blues. Most images concentrate colors in particular areas of the spectrum.

Restrictive (Web) Uses the standard 216-color color table common to the Windows and Mac OS 8-bit (256-color) palettes. This option ensures that no browser dither is applied to colors when the image is displayed using 8-bit color. (This palette is also called the web-safe palette.) Using the web palette can create larger files, and is recommended only when avoiding browser dither is a high priority.

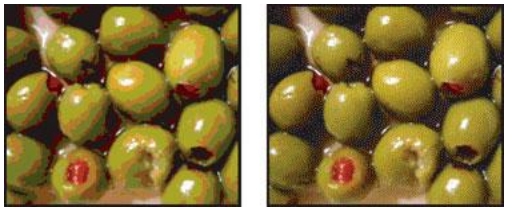
Custom Uses a color palette that is created or modified by the user. If you open an existing GIF or PNG-8 file, it will have a custom color palette.

Note:

Use the Color Table palette in the Save For Web & Devices dialog box to customize the color lookup table.

Black and White, Grayscale, Mac OS, Windows Use a set palette of colors.

Dithering Method and Dither Determines the method and amount of application dithering. Dithering refers to the method of simulating colors not available in the color display system of your computer. A higher dithering percentage creates the appearance of more colors and more detail in an image, but can also increase the file size. For optimal compression, use the lowest percentage of dither that provides the color detail you require. Images with primarily solid colors may work well with no dither. Images with continuous-tone color (especially color gradients) may require dithering to prevent color banding.



GIF image with 0% dither (left), and with 100% dither (right)

You can select one of the following dithering methods:

Diffusion Applies a random pattern that is usually less noticeable than Pattern dither. The dither effects are diffused across adjacent pixels.

Pattern Applies a halftone-like square pattern to simulate any colors not in the color table.

Noise Applies a random pattern similar to the Diffusion dither method, but without diffusing the pattern across adjacent pixels. No seams appear with the Noise dither method.

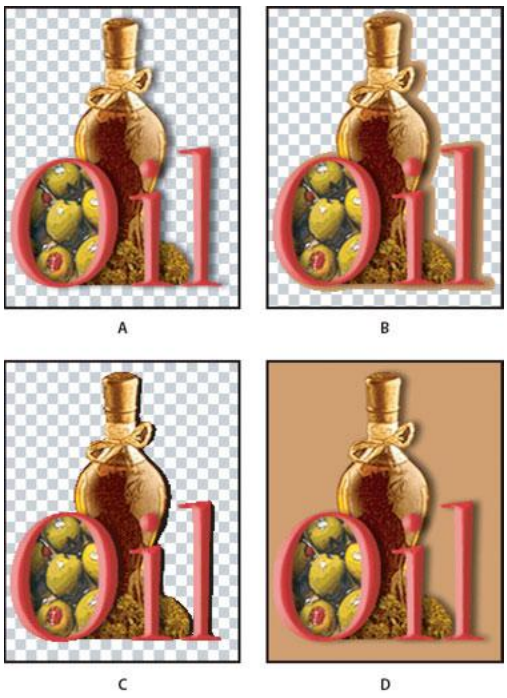
Transparency and Matte Determines how transparent pixels in the image are optimized.

- To make fully transparent pixels transparent and blend partially transparent pixels with a color, select Transparency and select a matte color.
- To fill fully transparent pixels with a color and blend partially transparent pixels with the same color, select a matte color and deselect Transparency.

- To select a matte color, click the Matte color swatch and select a color in the color picker. Alternatively, select an option from the Matte menu: Eyedropper Color (to use the color in the eyedropper sample box), Foreground Color, Background Color, White, Black, or Other (to use the color picker).

Note:

The Foreground Color andBackground Color options are only available in Photoshop.

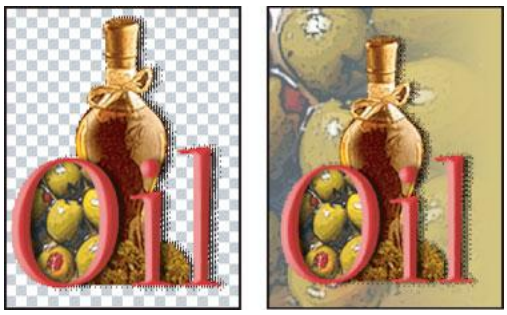


Examples of transparency and matting

A. Original image **B.** Transparency selected with a matte color **C.** Transparency selected with no matting **D.** Transparency deselected with a matte color

Transparency Dithering When the Transparency option is selected, you can choose a method for dithering partially transparent pixels:

- No Transparency Dither applies no dither to partially transparent pixels in the image.
- DiffusionTransparency Dither applies a random pattern that is usually less noticeable than Pattern dither. The dither effects are diffused across adjacent pixels. If you select this algorithm, specify a Dither percentage to control the amount of dithering that is applied to the image.
- Pattern Transparency Dither applies a halftone-like square pattern to partially transparent pixels.
- Noise Transparency Dither applies a random pattern similar to the Diffusion algorithm, but without diffusing the pattern across adjacent pixels. No seams appear with the Noise algorithm.



Example of Pattern Transparency dithering (left) and applied to a web page background (right)

Interlace Displays a low-resolution version of the image in a browser while the full image file is downloading. Interlacing can make downloading time seem shorter and can assure viewers that downloading is in progress. However, interlacing also increases file size.

Web Snap Specifies a tolerance level for shifting colors to the closest web palette equivalents (and prevent the colors from dithering in a browser). A higher value shifts more colors.

Optimize transparency in GIF and PNG images

Transparency makes it possible to create nonrectangular images for the web. Background transparency preserves transparent pixels in the image. This allows the background of the web page to show through the transparent areas of your image. Background mattingsimulates transparency by filling or blending transparent pixels with a matte color that can match the web page background. Background matting works best if the web page background is a solid color and if you know what that color is.

Use the Transparency and Matte options in the Save For Web & Devices dialog box to specify how transparent pixels in GIF and PNG images are optimized.

- (GIF and PNG-8) To make fully transparent pixels transparent and blend partially transparent pixels with a color, select Transparency and select a matte color.
- To fill fully transparent pixels with a color and blend partially transparent pixels with the same color, select a matte color and deselect Transparency.
- (GIF and PNG-8) To make all pixels with greater than 50% transparency fully transparent and all pixels with 50% or less transparency fully opaque, select Transparency and select None from the Matte menu.
- (PNG-24) To save an image with multilevel transparency (up to 256 levels), select Transparency. The Matte option is disabled since multilevel transparency allows an image to blend with any background color.

Note:

In browsers that do not support PNG-24 transparency, transparent pixels may be displayed against a default background color, such as gray.

To select a matte color, click the Matte color swatch and select a color in the color picker. Alternatively, select an option from the Matte menu: Eyedropper Color (to use the color in the eyedropper sample box), Foreground Color, Background Color, White, Black, or Other (to use the color picker).

Note:

The Foreground Color and Background Color options are only available in Photoshop.

View the color table for an optimized slice

The color table for a slice appears in the Color Table panel in the Save For Web & Devices dialog box.

Select a slice that is optimized in GIF or PNG-8 format. The color table for the selected slice appears in the SaveFor Web & Devices color table.

If an image has multiple slices, the colors in the color table may vary between slices (you can link the slices first to prevent this from happening). If you select multiple slices that use different color tables, the color table is empty and its status bar displays the message "Mixed."

Customize the color table for GIF and PNG-8 images

You use the color table in the Save For Web & Devices dialog box to customize the colors in optimized GIF and PNG-8 images. Reducing the number of colors often preserves image quality while reducing the file size of the image.

You can add and delete colors in the color table, shift selected colors to web-safe colors, and lock selected colors to prevent them from being dropped from the palette.

Sort a color table

Choose a sorting order from the Color Tablepalette menu:

- Unsorted restores the original sorting order.
- Sort By Hue sorts by the location of the color on the standard color wheel (expressed as a degree from 0 to 360). Neutral colors are assigned a hue of 0 and located with the reds.
- Sort By Luminance sorts by the lightness or brightness of a color.
- Sort By Popularity sorts by the colors' frequency of occurrence in the image.

Add a new color to the color table

You can add colors that were left out in building the color table. Adding a color to a dynamic table shifts the color in the palette closest to the new color. Adding a color to a fixed or Custom table adds an additional color to the palette.

1. If any colors are currently selected in the color table, choose Deselect All Colors from theColor Table palette menu to deselect them.
2. Choose a color by doing one of the following:
   - Click the Eyedropper Color box in the SaveFor Web & Devices dialog box and choose a color from the color picker.
   - Select the Eyedropper tool in the Save For Web & Devices dialog box and click in the image.
3. Do one of the following:
   - Click the New Color button in the color table.
   - SelectNew Color from the Color Table palette menu.
   - To switch the color table to a Custom palette, hold down Ctrl (Windows) or Command (Mac OS) when you add the new color.

     The new color appears in the color table with a small white square in the lower right corner, indicating that the color is locked. If the color table is dynamic, the original color is displayed in the upper left and the new color is displayed in the lower right.

Select colors in the color table

A white border appears around selected colors in the Color Table.

- To select a color, click the color in the Color Table.
- To select multiple colors in the color table, press Shift and click another color. All colors in the rows between the first and second selected colors are selected. To select a nonadjacent group of colors, press Ctrl (Windows) or Command (Mac OS) and click each color that you want to select. The Color Table palette menu also provides commands for selecting colors.
- To select a color in the preview image, click in the preview with the Save For Web & Devices Eyedropper tool. Shift-click to select additional colors.
- To deselect all colors, choose Deselect All Colors from the Color Tablepalette menu.

Shift a color

You can change a selected color in the color table to any other RGB color value. When you regenerate the optimized image, the selected color changes to the new color wherever it appears in the image.

1. Double-click the color in the color table to display the default color picker.
2. Select a color.

   The original color appears at the upper left of the color swatch and the new color at the lower right. The small square at the lower right of the color swatch indicates that the color is locked. If you shift to a web-safe color, a small white diamond appears at the center of the swatch.
3. To revert a shifted color to its original color, do one of the following:
   - Double-click the swatch for the shifted color. The original color is selected in the color picker. Click OK to restore the color.
   - To revert all shifted colors in a color table (including web-shifted colors), choose Unshift All Colors from the Color Tablepalette menu.

Shift colors to the closest web palette equivalent

To protect colors from dithering in a browser, you can shift the colors to their closest equivalents in the web palette. This ensures that the colors won't dither when displayed in browsers on either Windows or Macintosh operating systems capable of displaying only 256 colors.

1. Select one or more colors in the optimized image or color table.
2. Do one of the following:
   - Click the Web Shift button in the Color Table palette.
   - Choose Shift/Unshift Selected Colors To/From Web Palette from the Color Tablepalette menu.The original color appears at the upper left of the color swatch and the new color at the lower right. The small white diamond in the center of the color swatch indicates that the color is web-safe; the small square at the lower right of the color swatch indicates that the color is locked.
3. To set a tolerance for shifting, enter a value for Web Snap. A higher value shifts more colors.
4. To revert web-shifted colors, do one of the following:
   - Select a web-shifted color in the color table and click the Web Shift button in theColor Table palette.
   - To revert all web-shifted colors in the color table, choose Unshift All Colors from theColor Table palette menu.

Map colors to transparency

You can add transparency to an optimized image by mapping existing colors to transparency.

1 Select one or more colors in the optimized image or color table.

2 Do one of the following:

- Click the Map Transparency button in the Color Table palette.
- Choose Map/Unmap Selected Colors To/From Transparent from the Color Tablepalette menu.

  The transparency grid appears in half of each mapped color. The small square at the lower right of the color swatch indicates that the color is locked.

3 To revert transparency to original color, do one of the following:

- Select the colors you want to revert and click the Map Transparency button or choose Map/Unmap Selected Colors To/From Transparent from the Color Table palette menu.
- To revert all transparency-mapped colors, chooseUnmap All Transparent Colors.

Lock or unlock a color

You can lock selected colors in the color table to prevent them from being dropped when the number of colors is reduced and to prevent them from dithering in the application.

Note:

Locking colors does not prevent them from dithering in a browser.

1 Select one or more colors in the color table.

2 Lock the color by doing one of the following:

- Click the Lock button .
- Choose Lock/Unlock Selected Colors from the Color Table palette menu.

  A white square appears in the lower right corner of each locked color.

3 Unlock the color by doing one of the following:

- Click the Lock button .
- Choose Lock/Unlock Selected Colors from the Color Table palette menu.

  The white square disappears from the color swatch.

Delete selected colors

You can delete selected colors from the color table to decrease the image file size. When you delete a color, areas of the optimized image that previously included that color are rerendered using the closest color remaining in the palette.

When you delete a color, the color table automatically changes to a Custom palette. This is because the Adaptive, Perceptual, and Selective palettes automatically add the deleted color back into the palette when you reoptimize the image—the Custom palette does not change when you reoptimize the image.

1 Select one or more colors in the color table.

2 Delete the color by doing one of the following:

- Click the Delete icon .
- Choose Delete Color from the Color Table palette menu.

Save a color table

You can save color tables from optimized images to use with other images and to load color tables created in other applications. Once you load a new color table into an image, the colors in the optimized image are changed to reflect the colors in the new color table.

1 Select Save Color Table from the Color Table palette menu.

2 Name the color table and choose a location where it will be saved. By default, the color table file is given the extension .act (for Adobe Color Table).

If you want to access the color table when selecting Optimization options for a GIF or PNG image, save the color table in the Optimized Colors folder inside the Photoshop application folder.

3 Click Save.

Note:

When you reload the table, all shifted colors will appear as full swatches and will be unlocked.

Load a color table

1 Select Load Color Table from the Color Table palette menu.

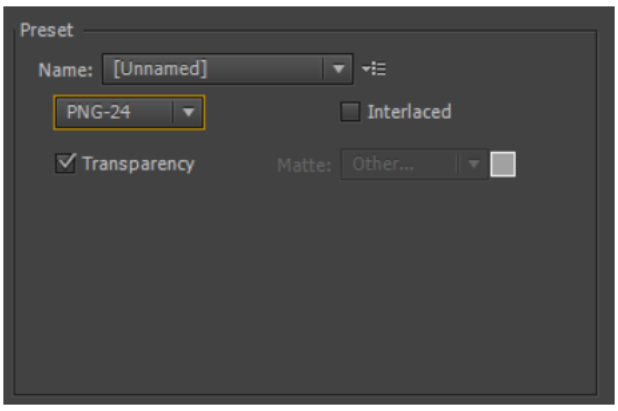
2 Navigate to a file containing the color table you want to load—either an Adobe Color Table (.act) file, an Adobe Color Swatch (.aco) file, or a GIF file (to load the file's embedded color table).

3 Click Open.

PNG-24 optimization options

PNG-24 is suitable for compressing continuous-tone images; however, it produces much larger files than JPEG format. The advantage of using PNG-24 is that it can preserve up to 256 levels of transparency in an image.

Transparency and Matte Determine how transparent pixels in the image are optimized. See Optimize transparency in GIF and PNG images.



PNG-24 options

Interlace Displays a low-resolution version of the image in a browser while the full image file is downloading. Interlacing can make downloading time seem shorter and can assure viewers that downloading is in progress. However, interlacing also increases file size.

More Help topics

Optimize an image for the web

Export settings for Images and GIFs

Set output options

Output settings control how HTML files are formatted, how files are named, and how background images are handled when you save an optimized image. You set these options in the Output Settings dialog box.

You can save your output settings and apply them to other files.

1 To display the Output Settings dialog box, do one of the following:

- When you save an optimized image, choose Other from the Settings pop-up menu in the Save Optimized or Save Optimized As dialog box.
- Choose Edit Output Settings from the Optimize pop-up menu (to the right of the Preset menu).

2 (Optional) To display predefined output options, choose an option from the Settings pop-up menu.

3 Edit each set of options as needed. To switch to a different set of options, choose an options set from the pop-up menu below the Settings menu. Alternatively, click Next to display the next set in the menu list; click Prev to display the previous set.

4 (Optional) To save output settings, set the options as desired, and click Save. Type a file name, choose a location for the saved file, and click Save.

You can save the output settings anywhere. However, if you place the file in theOptimized Output Settings folder inside the Animate folder the file will appear in the Settings pop-up menu.

5 (Optional) To load output settings, click Load, select a file, and click Open.

Saving File output settings

You set the following options in the Saving Files set of the Output Settings dialog box:

File Naming Choose elements from the pop-up menus or enter text into the boxes to be combined into the default names for all files. Elements include document name, slice name, rollover state, trigger slice, file creation date, and file extension.

The text boxes let you change the order and formatting of the filename parts (for example, letting you indicate rollover state by an abbreviation instead of the full word).

Filename Compatibility Select one or multiple options to make the filename compatible with Windows (permits longer filenames) and Mac OS.

Put Images In Folder Specifies a folder name where optimized images are saved (available only with documents containing multiple slices).

Copy Background Image When Saving Preserves a background image that has been specified in the Background preferences set.

Chapter 4: Multimedia and Video

Transforming and combining graphic objects in Animate CC

Transforming objects

You can transform graphic objects, groups, text blocks, and instances, by using the Free Transform tool or the options in the **Modify > Transform** menu. Depending on the type of element you select, you can transform, rotate, skew, scale, or distort the element. You can change or add to a selection during a transformation operation.

When you transform an object, group, text box, or instance, the Property inspector for that item displays any changes made to the item's dimensions or position.

A bounding box appears during transform operations that involve dragging. The bounding box is rectangular (unless it was modified with the Distort command or the Envelope modifier), with its edges initially aligned parallel to the edges of the Stage. Transformation handles are on each corner and in the middle of each side. As you drag, the bounding box previews the transformations.

Move, realign, change, and track the transformation point

During a transformation, a transformation point appears at the center of a selected element. The transformation point is initially aligned with the object's center point. You can move the transformation point, return it to its default location, and move the default point of origin.

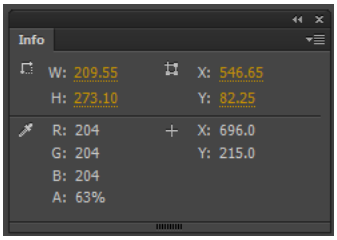
For scaling, skewing, or rotating graphic objects, groups, and text blocks, the point opposite the point you drag is the point of origin by default. For example, the transformation point is the point of origin by default. You can move the default point of origin for a transformation.

1 Select the Free Transform tool , or select one of the Modify > Transform commands.

   Once you have begun a transformation, you can track the location of the transformation point in the Info panel and in the Property inspector.

2 Do one of the following:

   - To move the transformation point, drag it from within the selected graphic object.
   - To realign the transformation point with the element's center point, double-click the transformation point.
   - To switch the point of origin for a scale or skew transformation, hold down the Alt key (Windows) or Option key (Macintosh) while dragging your chosen object control point during the transformation.
   - In the Info panel, you can toggle to display Registration and Transformation points. The button appears as to indicate that the registration point coordinates are being displayed. On clicking the same button, it changes to , indicating that the Transformation coordinates are being displayed.



Coordinate grid; Info panel with Registration/Transformation Point button in transformation mode, and with x and y coordinates of the selection transformation point visible.

Use the Free Transform tool

You can perform individual transformations or combine several transformations, such as moving, rotating, scaling, skewing, and distortion.

Note:

The Free Transform tool cannot transform symbols, bitmaps, video objects, sounds, gradients, or text. If the ***multiple selection*** *contains any of these items, only the shape objects are distorted. To transform a text block, first convert the characters to shape objects.*

1. Select a graphic object, group, instance, or text block on the Stage.
2. Click the Free Transform tool .

   Moving the pointer over and around the selection changes the pointer to indicate which transformation function is available.
3. To transform the selection, drag the handles:
   - To move the selection, position the pointer over the object within the bounding box, and drag the object to a new position. Do not drag the transformation point.
   - To set the center of rotation or scaling, drag the transformation point to a new location.
   - To rotate the selection, position the pointer just outside a corner handle and drag. The selection rotates around the transformation point. Shift-drag to rotate in 45° increments.
   - To rotate around the opposite corner, Alt-drag (Windows) or Option-drag (Macintosh).
   - To scale the selection, drag a corner handle diagonally to scale in two dimensions. Shift-drag to resize proportionally.
   - To scale in the respective direction only, drag a corner handle or a side handle horizontally or vertically.
   - To skew the selection, position the pointer on the outline between the transformation handles and drag.
   - To distort shapes, press Control (Windows) or Command (Macintosh) and drag a corner handle or a side handle.
   - To taper the object, move the selected corner and the adjoining corner equal distances from their origins, Shift-Control-click to drag (Windows) or Shift-Command-click to drag (Macintosh) a corner handle.
4. To end the transformation, click outside the selected item.

Distort objects

When you apply a Distort transformation to a selected object, dragging a corner handle or an edge handle on the bounding box moves the corner or edge and realigns the adjoining edges. To constrain the distortion to a taper, Shift-drag a corner point by moving that corner and the adjoining corner an equal distance and in the opposite direction from each other. The adjoining corner is the corner on the same axis as the direction you drag. Drag a middle point on an edge to move the entire edge freely by using Control-click (Windows) or Command-click (Macintosh).

You can distort graphic objects by using the Distort command. You can also distort objects when performing a free transform on them.

Note:

*The Distort command cannot modify symbols, shape primitives, bitmaps, video objects, sounds, gradients, object groups, or text. If the **multiple selection** contains any of these items, only the shape objects are distorted. To modify text, first convert the characters to shape objects.*

1. Select a graphic object or objects on the Stage.
2. Select **Modify > Transform > Distort**.
3. Place the pointer on one of the transformation handles and drag.
4. To end the transformation, click outside the selected object or objects.

Modify shapes with the Envelope modifier

The Envelope modifier lets you warp and distort objects. An envelope is a bounding box that contains one or more objects. Changes made to an envelope's shape affect the shape of the objects in the envelope. You edit the shape of an envelope by adjusting its points and tangent handles.

Note:

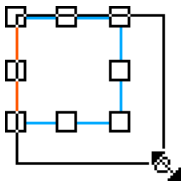
*The Envelope modifier cannot modify symbols, bitmaps, video objects, sounds, gradients, object groups, or text. If the **multiple selection** contains any of these items, only the shape objects are distorted. To modify text, first convert the characters to shape objects.*

1. Select a shape on the Stage.
2. Select **Modify > Transform > Envelope**.
3. Drag the points and tangent handles to modify the envelope.

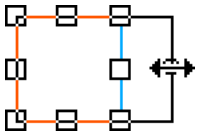
Scale objects

Scaling an object enlarges or reduces the object horizontally, vertically, or both.

1. Select a graphic object or objects on the Stage.
2. Select **Modify > Transform > Scale**.
3. Do one of the following:
   - To scale the object both horizontally and vertically, drag one of the corner handles. Proportions are maintained as you scale. Shift-drag to scale nonuniformly.



- To scale the object either horizontally or vertically, drag a center handle.



4 To end the transformation, click outside the selected object or objects.

Note:

When you increase the size of some items, items near the edges of the bounding box might be moved off the Stage. If this issue occurs, select View > Pasteboard to see the elements that are beyond the edges of the Stage.

Rotate and skew objects

Rotating an object turns it around its transformation point. The transformation point is aligned with the registration point, which defaults to the center of the object, but you can move the point by dragging it.

You can rotate an object by the following methods:

- Dragging with the Free Transform tool (you can skew and scale the object in the same operation).
- By specifying an angle in the Transform panel (you can scale the object in the same operation).

Rotate and skew objects by dragging

1 Select the object or objects on the Stage.

2 Select **Modify > Transform > Rotate And Skew**.

3 Do one of the following:

- Drag a corner handle to rotate the object.
- Drag a center handle to skew the object.

4 To end the transformation, click outside the selected object or objects.

Rotate objects by 90°

1 Select the object or objects.

2 Select **Modify > Transform > Rotate 90° CW** to rotate clockwise, or Rotate 90° CCW to rotate counterclockwise.

Skew objects

Skewing an object transforms it by slanting it along one or both axes. You can skew an object by dragging or by entering a value in the Transform panel.

1 Select the object or objects.

2 Select **Window** > **Transform**.

3 Click Skew.

4 Enter angles for the horizontal and vertical values.

Flip objects

You can flip objects across their vertical or horizontal axis without moving their relative position on the Stage.

1 Select the object.

2 Select **Modify** > **Transform** > **Flip Vertical or Flip Horizontal**.

Restore transformed objects

When you use the Free Transform tool or the Transform panel to scale, rotate, and skew instances, groups, and text, Animate saves the original size and rotation values with the object. This lets you remove the transformations you applied and restore the original values.

You can undo only the most recent transformation when you select Edit > Undo. You can remove all transformations by clicking the Remove Transform button in the panel before you deselect the object. After you deselect the object, the original values are lost and the transformation cannot be removed.

Restore a transformed object to its original state

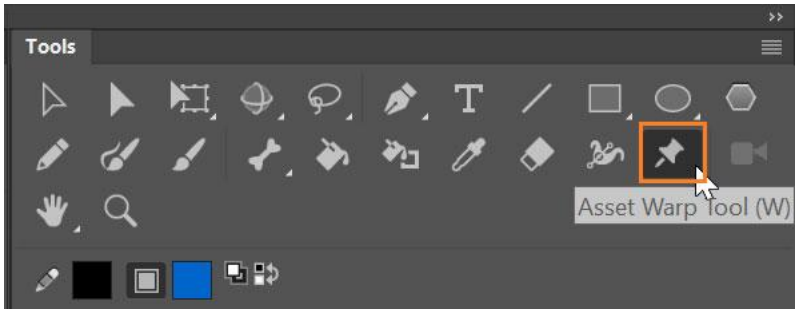
1 Ensure that the transformed object is still selected.

2 Do one of the following:

- Click the Remove Transform button in the Transform panel
- Select **Modify** > **Transform** > **Remove Transform**

Asset sculpting for vector and raster content

A new Asset warp tool has been introduced in Animate 19.0 release. You can use the asset warp tool to create warp handles on shapes, drawing objects, and bitmaps in Animate. By dragging the warp handles with asset warp tool, you can deform the shapes, drawing objects, and bitmaps.



Asset warp tool

Using the warp handles that appear on the objects, you can re-shape or distort specific object areas while leaving other areas intact. All the selected objects are grouped when you create the first warp handle. On inserting a keyframe, the warp handles from the previous keyframe are copied to the new keyframe.

Some of the cursor styles that appear when you hover mouse on objects with the asset warp tool are shown below for your reference.

- This cursor appears when the asset warp tool is not supported on an object.

- This cursor indicates that you can use the asset warp tool to create warp handles on an object.

- This cursor indicates that you can click the warp handle to reshape an object.

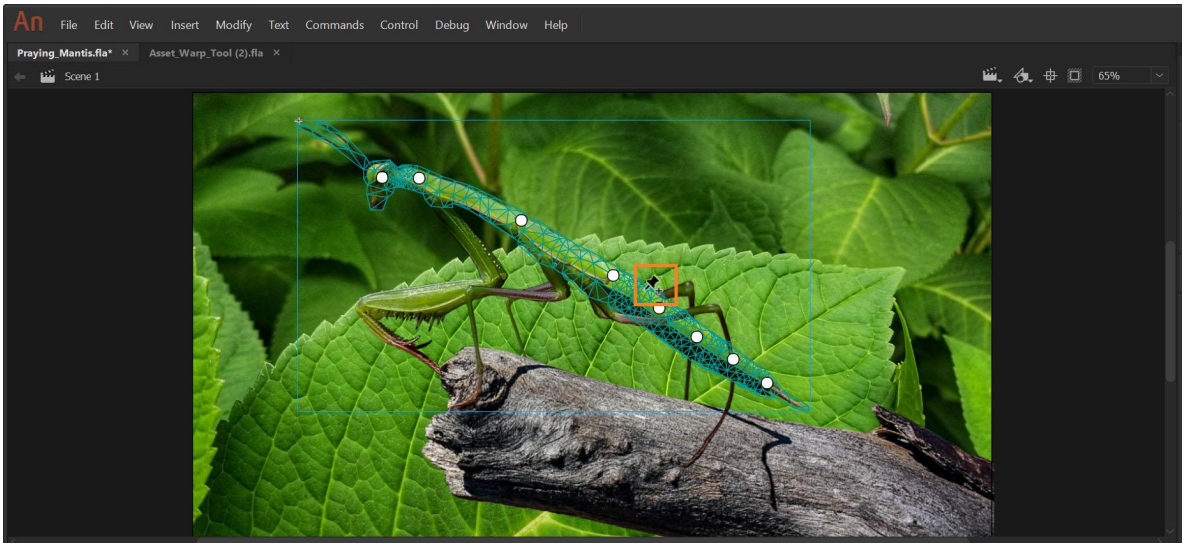
This cursor indicates that you can rotate the object.

Using the asset warp tool

1 To begin, create a shape or import a bitmap image on the stage.

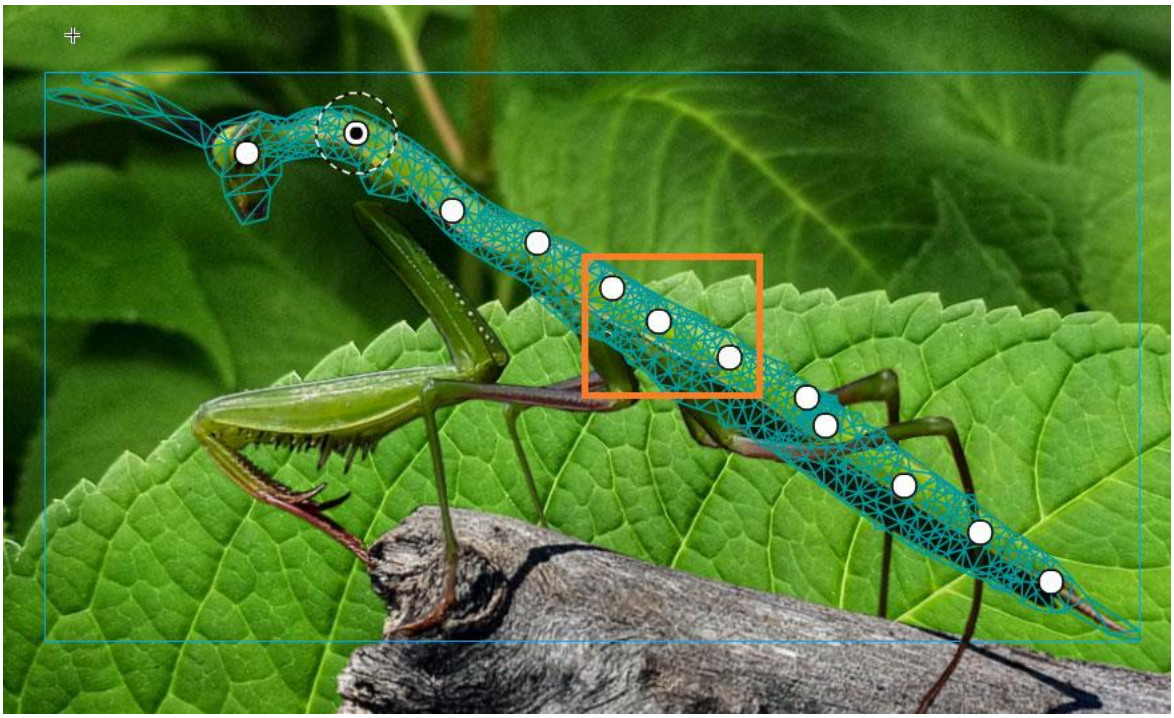
2 Click the asset warp tool from the toolbar.

3 When you hover mouse over a shape or drawing object, a symbol appears. You can then click to add warp handles.



Hover mouse over a shape or drawing object

4 Asset warp handles are displayed as small solid circles on the shape/drawing object. You could use as many handles as you need to warp the shape effectively. Use the Delete key from keyboard to delete a puppet warp handle.



Asset warp handles

5 **Shift + Click** the puppet warp handles to select multiple handles. You can drag the handles using asset warp tool to deform the shape as per your requirement.

Deforming shapes using handles

6 Choose one of the two modes associated with warp handles.

a. **Open mode** - This mode allows more degrees of freedom around the handle during deformation. A handle in this mode is drawn as a white solid-circle.

b. **Fixed mode** - This mode allows lesser degrees of freedom around the handle during deformation. A handle in this mode is drawn as a black solid-circle.

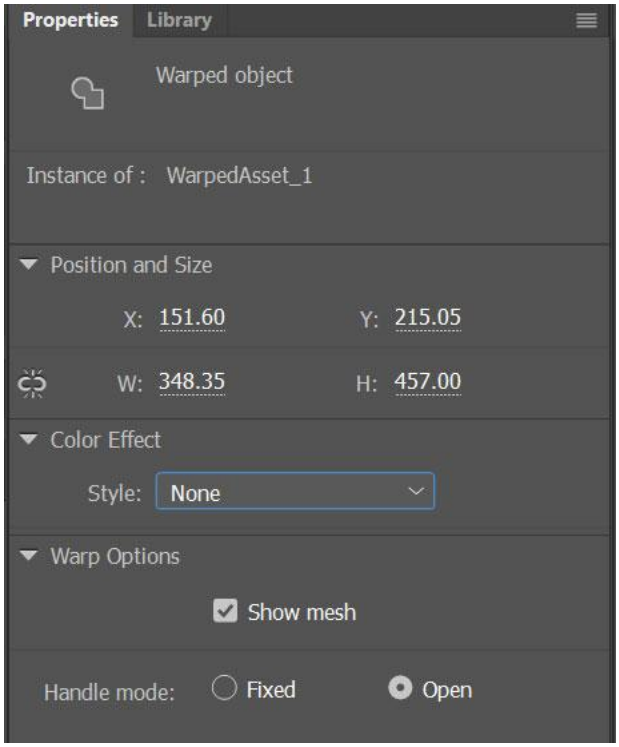
To toggle between the two modes, use **Alt + Click** on the warp handles.

A tutorial on asset warping

A tutorial on asset warping

Editing a base shape

Base shape is the shape before applying any warping. Asset warping works on meshes overlaid on top of the base shape. You can also modify the base shape by switching to selection tool and then double-clicking on the warped shape. Any modifications you make on the base shape are applied to all the warped instances of that shape. This feature works only on vector shapes.



Asset warp shape properties

Tweening for Asset warp tool

You can use classic tweening with the Asset Warp tool. For example, you can apply Classic Tween to tween puppet poses.

How to work with classic tween animation in Animate CC to learn more about classic tweening.

Note:

To tween the poses, you should use same set of handles in the shape.

Combining objects

To create new shapes by combining or altering existing objects, use the Combine Objects commands in the Modify menu (**Modify > Combine Objects**). Sometimes, the stacking order of selected objects determines how the operation works.

Each command applies to specific types of graphic objects, which are noted below. A merge shape is a shape drawn with a tool set to Merge Drawing mode. A drawing Object is a shape drawn with a tool set to Object Drawing mode.

The Combine Objects commands are:

Union Joins two or more merge shapes or drawing objects. The result is a single Object Drawing mode shape consisting of all the portions visible on the shapes before they were unified. The unseen, overlapping portions of the shapes are deleted.

Note:

*Unlike when you use the Group command (**Modify** > **Group**), you cannot break apart shapes joined by using the Union command.*

Intersect Creates an object from the intersection of two or more drawing objects. The resulting Object Drawing shape consists of the overlapping portions of the combined shapes. Any part of the shape that doesn't overlap is deleted. The resulting shape uses the fill and stroke of the top-most shape in the stack.

Punch Removes portions of a selected drawing object as defined by the overlapping portions of another selected drawing object positioned in front of it. Any part of a drawing object that is overlapped by the top-most object is deleted, and the top-most object is deleted entirely. The resulting objects remain separate and are not combined into a single object (unlike the Union or Intersect commands, which join the objects together).

Crop Uses the outline of one drawing object to crop another drawing object. The front or top-most object defines the shape of the cropped area. Any part of an underlying drawing object that overlaps with the top-most object remains, while all other portions of the underlying objects are deleted, and the top-most object is deleted entirely. The resulting objects remain separate, and are not combined into a single object (unlike the Union or Intersect commands, which join the objects).

Working with and create symbol instances in Animate CC

Create instances

After you create a symbol, you can create instances of that symbol throughout your document, including inside other symbols. When you modify the symbol, Animate CC (formerly Flash Professional CC) updates all instances of the symbol.

You can give names to instances from the Property inspector. Use the instance name to refer to an instance in ActionScript. To control instances with ActionScript®, give each instance within a single timeline a unique name.

To specify color effects, assign actions, set the graphic display mode, or change the behavior of new instances, use the Property inspector. The behavior of the instance is the same as the symbol behavior, unless you specify otherwise. Any changes you make affect only the instance and not the symbol.

Create an instance of a symbol

1. Select a layer in the Timeline. Animate can place instances only in keyframes, always on the current layer. If you don't select a keyframe, Animate adds the instance to the first keyframe to the left of the current frame.

   Note:

   A keyframe is a frame in which you define a change in the animation. For more information, see Inserting frames in the timeline.

2. Select Window > Library.
3. Drag the symbol from the library to the Stage.
4. If you created an instance of a graphic symbol, to add the number of frames that will contain the graphic symbol, select Insert > Timeline > Frame.

Apply a custom name to an instance

1. Select the instance on the Stage.

2 Select Window > Properties, and enter a name in the Instance Name box.

Editing instance properties

Each symbol instance has its own properties that are separate from the symbol. You can change the tint, transparency, and brightness of an instance; redefine how the instance behaves (for example, change a graphic to a movie clip); and specify how an animation plays inside a graphic instance. You can also skew, rotate, or scale an instance without affecting the symbol.

In addition, you can name a movie clip or button instance so that you can use ActionScript to change its properties. For more information, see Objects and classes in Learning ActionScript 3.0. To edit instance properties, you use the Property inspector (Windows > Properties).

The properties of an instance are saved with it. If you edit a symbol or relink an instance to a different symbol, any instance properties you've changed still apply to the instance.

Set the visibility of an instance

You can make a symbol instance on the Stage invisible by turning off the Visible property. Using the Visible property provides faster rendering performance than setting the symbol's Alpha property to 0.

The Visible property requires a Player setting of Flash Player 10.2 or later and is only compatible with movie clip, button, and component instances.

1 Select the instance on the Stage.

2 In the Display section of the Properties panel, deselect the Visible property.

Change the color and transparency of an instance

Each instance of a symbol can have its own color effect. To set color and transparency options for instances, use the Property inspector. Settings in the Property inspector also affect bitmaps placed in symbols.

When you change the color and transparency for an instance in a specific frame, Animate makes the change as soon as it displays that frame. To make gradual color changes, apply a motion tween. When tweening color, you enter different effect settings in starting and ending keyframes of an instance, and then tween the settings to make the instance's colors shift over time.

Tweening gradually changes an instance's color or transparency.

Note:

If you apply a color effect to a movie clip symbol that has multiple frames, Animate applies the effect to every frame in the movie clip symbol.

1. Select the instance on the Stage, and select Window > Properties.
2. In the Property inspector, select one of the following options from the Style menu in the Color Effect section:

   Brightness Adjusts the relative lightness or darkness of the image, measured on a scale from black (–100%) to white (100%). To adjust brightness, click the triangle and drag the slider or enter a value in the box.

   Tint Colors the instance with the same hue. To set the tint percentage from transparent (0%) to completely saturated (100%), use the Tint slider in the Property inspector. To adjust tint, click the triangle and drag the slider or enter a value in the box. To select a color, enter red, green, and blue values in the respective boxes, or click the Color control and select a color from the Color Picker.

   Alpha Adjusts the transparency of the instance, from transparent (0%) to completely saturated (100%). To adjust the alpha value, click the triangle and drag the slider or enter a value in the box.

   Advanced Separately adjusts the red, green, blue, and transparency values of an instance. This is most useful to create and animate subtle color effects on objects such as bitmaps. The controls on the left let you reduce the color or transparency values by a specified percentage. The controls on the right let you reduce or increase the color or transparency values by a constant value.

   The current red, green, blue, and alpha values are multiplied by the percentage values, and then added to the constant values in the right column, producing the new color values. For example, if the current red value is 100, setting the left slider to 50% and the right slider to 100% produces a new red value of 150 ([100 x .5] + 100 = 150).

   ***note**: The Advanced settings in the Effect panel implement the function (a * y+ b)= x where a is the percentage specified in the left set of boxes, y is the color of the original bitmap, b is the value specified in the right set of boxes, and x is the resulting effect (between 0 and 255 for RGB, and 0 and 100 for alpha transparency).*

   You can also change the color of an instance using the ActionScript ColorTransform object. For detailed information on the Color object, see ColorTransform in *ActionScript 2.0 Language Reference* or *ActionScript 3.0 Language and Components Reference*.

Swap one instance for another

To display a different instance on the Stage and preserve all the original instance properties, such as color effects or button actions, assign a different symbol to an instance.

For example, suppose you are creating a cartoon with a rat symbol for your character, but decide to change the character to a cat. You could replace the rat symbol with the cat symbol and have the updated character appear in roughly the same location in all your frames.

Assign a different symbol to an instance

1. Select the instance on the Stage, and select Window > Properties.
2. Click the Swap button in the Property inspector.
3. Select a symbol to replace the symbol currently assigned to the instance. To duplicate a selected symbol, click Duplicate Symbol and click OK.

   Duplicating lets you base a new symbol on an existing one in the library and minimizes copying if you're making several symbols that differ slightly.

Replace all instances of a symbol

? Drag a symbol with the same name as the symbol you are replacing from one Library panel into the Library panel of the FLA file you are editing and click Replace. If you have folders in the library, the new symbol must be dragged into the same folder as the symbol you are replacing.

Change an instance's type

To redefine an instance's behavior in a Animate application, change its type. For example, if a graphic instance contains animation that you want to play independently of the main Timeline, redefine the graphic instance as a movie clip instance.

1. Select the instance on the Stage, and select Window > Properties.
2. Select Graphic, Button, or Movie Clip from the menu in the Property inspector.

Set looping for a graphic instance

To determine how animation sequences inside a graphic instance play in your Animate application, set options in the Property inspector.

An animated graphic symbol is tied to the Timeline of the document in which the symbol is placed. In contrast, a movie clip symbol has its own independent Timeline. Animated graphic symbols, because they use the same Timeline as the main document, display their animation in document-editing mode. Movie clip symbols appear as static objects on the Stage and do not appear as animations in the Animate editing environment.

1. Select a graphic instance on the Stage, and select Window > Properties.
2. Select an animation option from the Options menu in the Looping section of the Property inspector:

   Loop Loops all the animation sequences contained in the current instance for as many frames as the instance occupies.

   Play Once Plays the animation sequence beginning from the frame you specify to the end of the animation and then stops.

   Single Frame Displays one frame of the animation sequence. Specify which frame to display.
3. To specify the first frame of the graphic symbol to display when looping, enter a frame number in the First text box. The Single Frame option also uses the frame number you specify here.

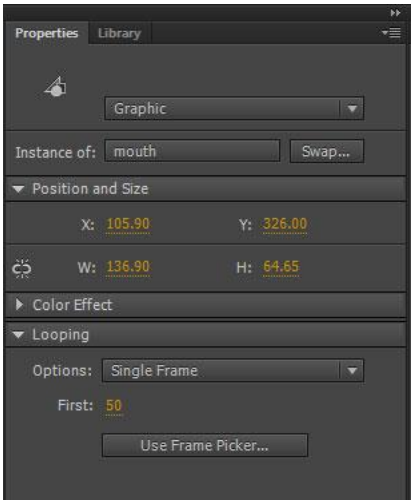
Frame Picker

Fame Picker helps you to visually preview and choose the first frame for a graphic symbol. In previous releases, you could not preview the frames without getting within the symbol in **Edit** mode. This feature enhances user experience for animation workflows such as Lip-Sync.

Note:

Frame Picker panel works only with graphic symbols and is disabled for movie clip or button symbol types. Ensure that you have Convert selected elements to a symbolbefore you work with this feature.Working with symbols in Animate CCConvert selected elements to a symbol

1 Select a **G**raphic symbol > **P**roperties **P**anel > **L**ooping > **U**se **F**rame **P**ickerbutton to display the **F**rame **P**icker panel or select **W**indow >**F**rame **P**icker.



Frame Picker

2 In the Frame Picker panel, select List or Thumbnail view to display all the frame previews of the selected graphic symbol. You can also view the frame numbers and their labels.

List Displays the frames in a vertical list view.

Thumbnail Displays frames are in grid view and re-adjusts when the panel is resized.

Create Keyframe This option enables you to create a Keyframe automatically when you select a position from the framepicker panel.

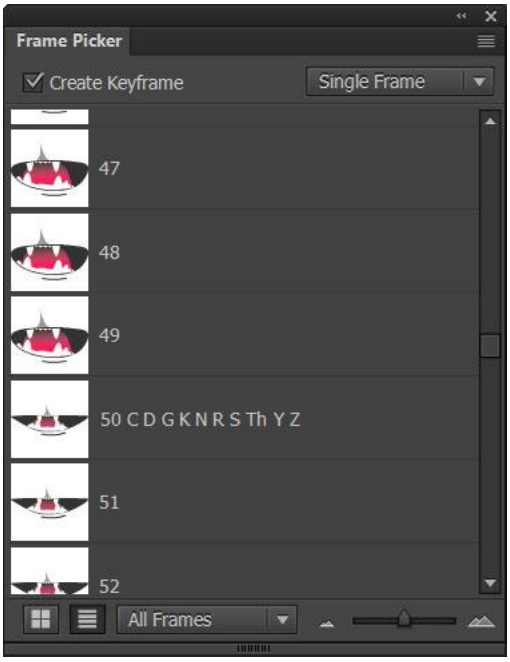
Loop Displays the various looping options for graphics such as Loop, Play once, and Single frame.

Slider arrow Adjusts preview size

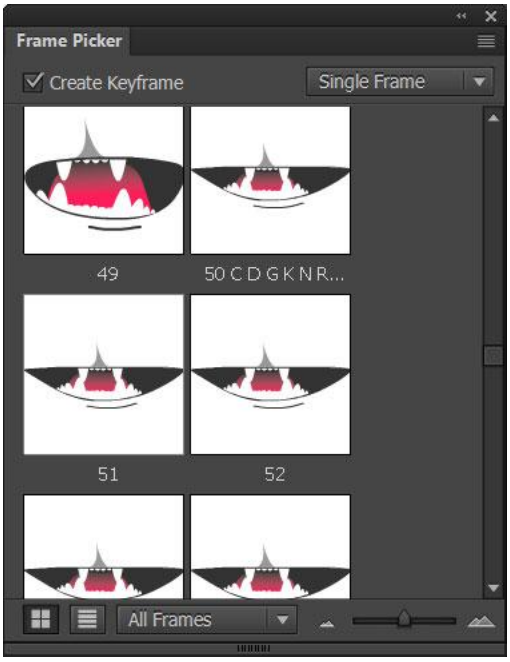
Slider left button Fits more frames in view

Slider right button Fits less frames in view

Filter frame options dropdown Displays the various filter frame options



List view



Thumbnail view

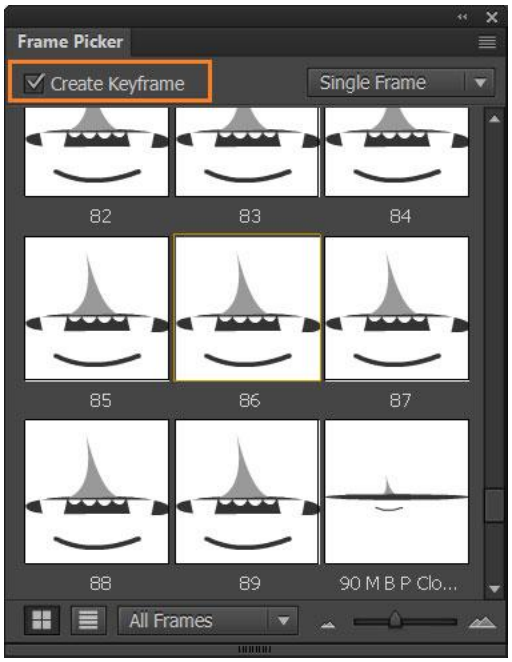
3 Use the **S**lideror the **Z**oom **b**uttons to adjust the preview or thumbnail size. Adjust the **S**lider to the left corner of the panel to view more frames in the view. If you move the **S**lider to the right corner, you can view bigger previews.

4 Click on any frame to set it as the First Frame for the selected symbol.

Create Keyframe

Frame Picker panel offers a Create Keyframe check box that allows automatic creation of Keyframes when selecting a frame in the Frame Picker panel. You can also set looping option of Graphic symbols from within the Frame Picker panel.

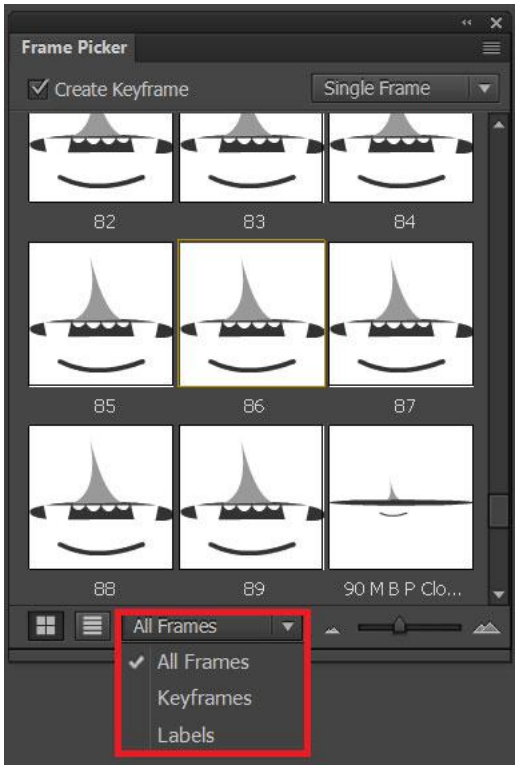
You can invoke the Frame Picker panel by selecting a **G**raphic symbol > **P**roperties **P**anel > **L**ooping >**U**se **F**rame **P**icker button to display the **F**rame **P**icker or by selecting **W**indow > **F**rame **P**icker.



Filtering options for Frames

Animate offers filtering options for the frames listed in the panel. You can choose to filter by,

- **A**ll Frames - displays all the frames.
- **K**eyframes - displays only key frames as selected by you.
- **L**abels - displays only frames with labels.



Auto Lip-Sync

Auto lip-syncing allows easier and faster method of placing appropriate mouth shapes on Timeline, based on the chosen audio layer. You can achieve this using an existing list of mouth poses, drawn within a graphic symbol. When you apply auto lip-syncing on a graphic symbol, key-frames are created automatically at different positions matching with the audio visemes, after analyzing the specified audio layer. Once completed, you can make any further adjustments if needed, by using regular workflows and Frame Picker.

A viseme is a generic facial image that can be used to indicate a sound.

Creating a Lip-Sync

Follow the steps as mentioned below to start creating a Lip-Sync:

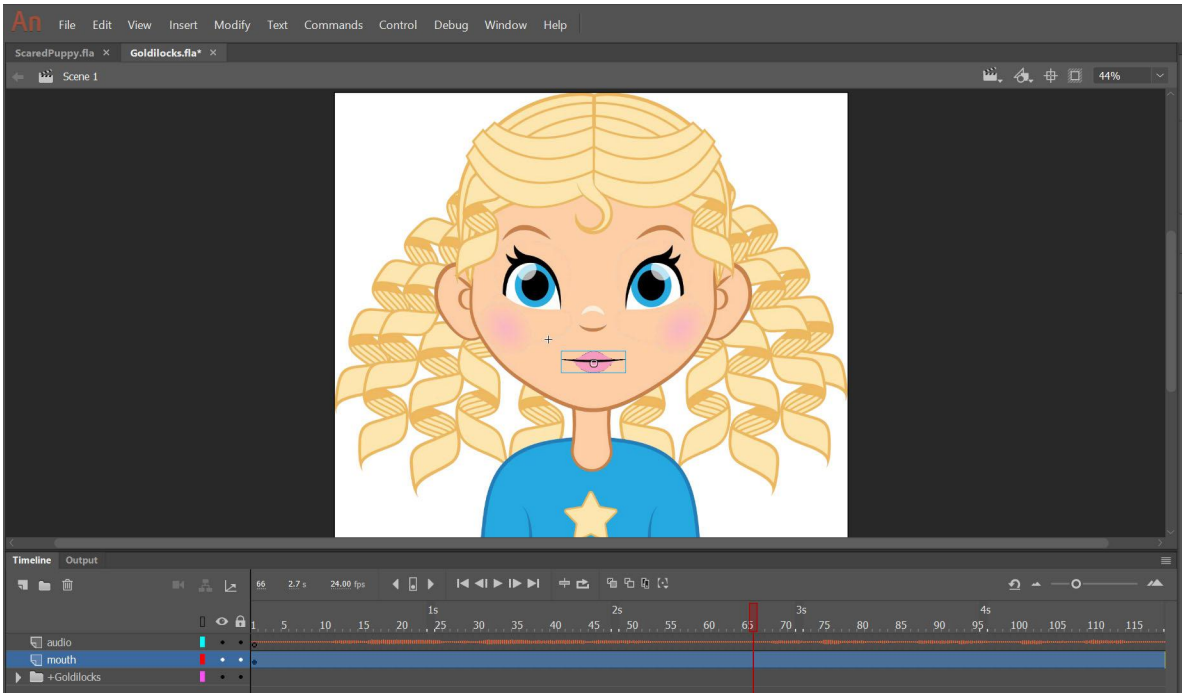
1 Create a graphic symbol (mouth pose).

Inside the graphic symbol, you can draw all the mouth poses/visemes.

2 In main timeline, import an audio in new layer.

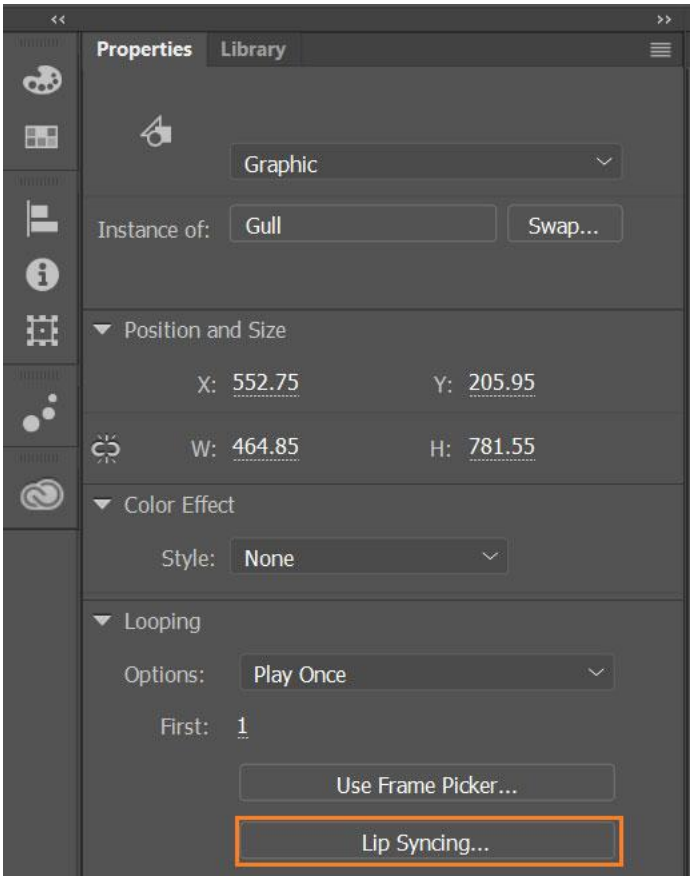
Note:

Auto Lip syncing works best with Audio sync setting set to **Stream**.



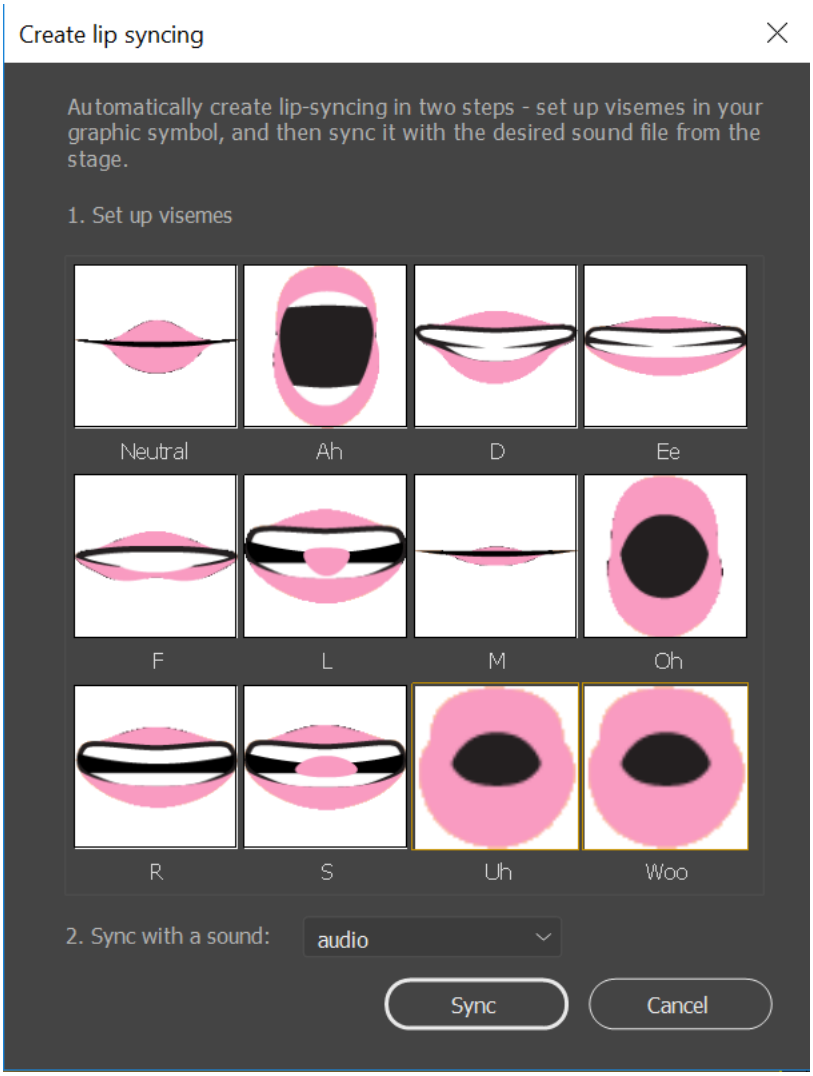
Sample symbol with audio layer

3 Select the mouth graphic symbol. In Property Inspector, click **Lip Syncing**.



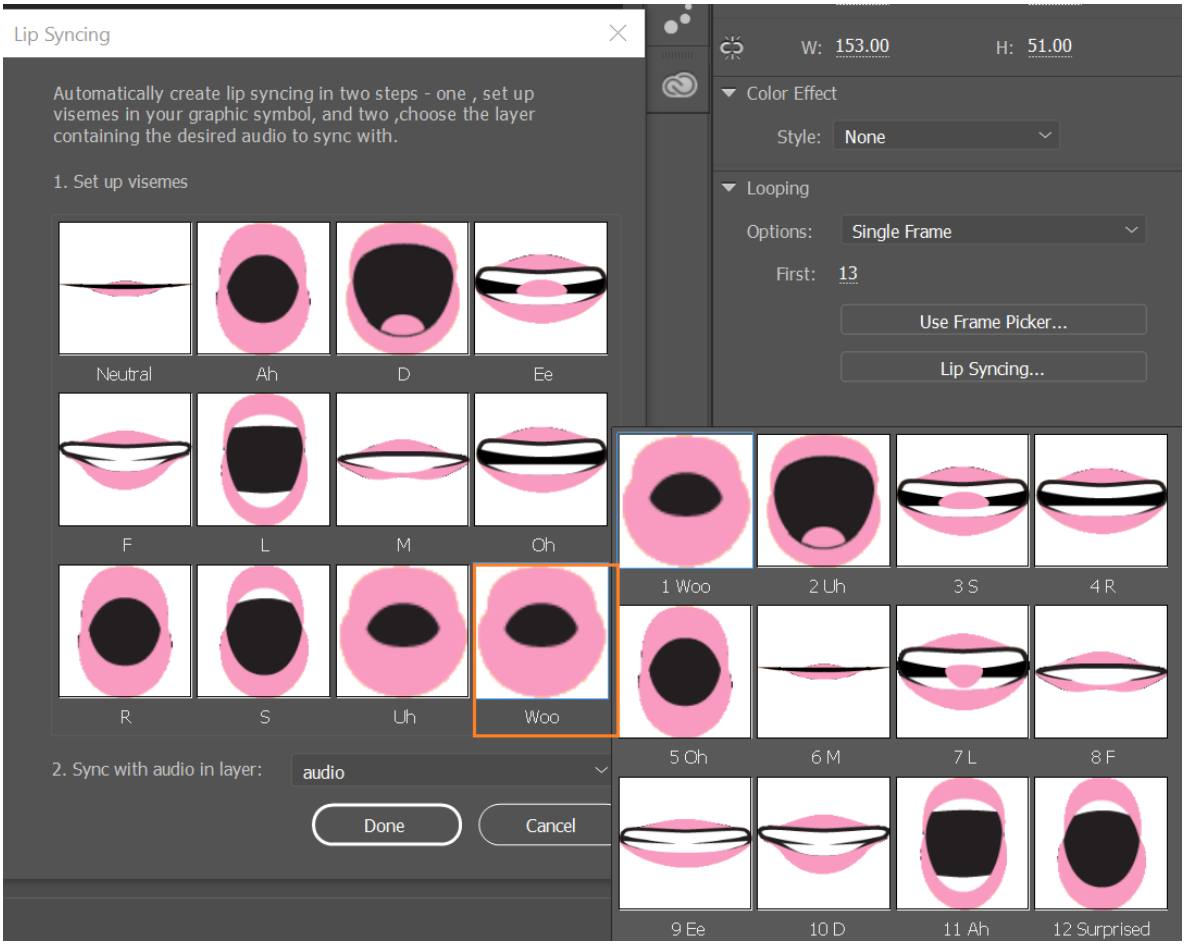
Lip syncing in property inspector

Create lip syncing dialog appears. By default, the 12 basic types of visemes are displayed as shown in the screenshot below:



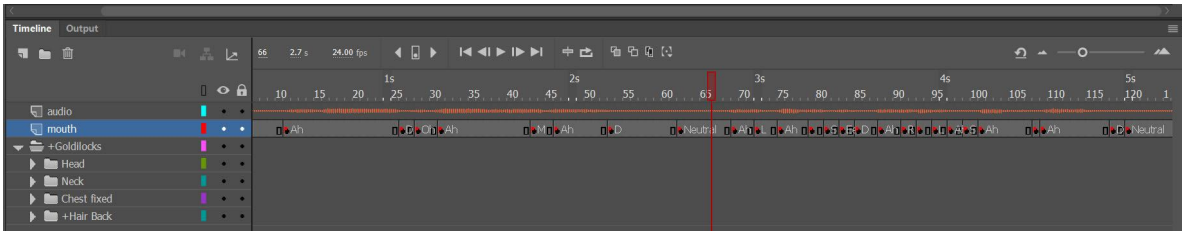
Create lip syncing

4 Click on any viseme to modify its mouth pose mapping. A pop-up appears with all the poses present inside the graphic symbol. Select appropriate frame from the pop-up to set it for the current viseme.



Modifying mouth pose for each viseme

5 Select the audio layer for which the lip to be synced. Click the**Sync** button.



Timeline screenshot after applying lip sync

Note:

Auto Lip syncing applies on the frame span where the selected graphic symbol is present. You can also select multiple keyframes first to apply lip syncing across the selected frame range.

6 Press **Ctrl+Enter** to run the file and preview the output.

You can view the animated file with the auto-generated mouth movements that are also in sync with the sound file.

Break apart a symbol instance

To break the link between an instance and a symbol and make the instance into a collection of ungrouped shapes and lines, you break apart the instance. This feature is useful for changing the instance substantially without affecting any other instance.

Changes to the source symbol for an instance do not affect an instance after it has been broken apart.

1. Select the instance on the Stage.
2. Select Modify > Break Apart. This action breaks the instance into its component graphic elements.
3. To modify these elements, use the painting and drawing tools.

Get information about instances on the Stage

The Property inspector and Info panel display the following information about instances selected on the Stage:

- In the Property inspector, view the instance's behavior and settings—for all instance types, color effect settings, location, and size; for graphics, the loop mode and first frame that contains the graphic; for buttons, the instance name (if assigned) and tracking option; for movie clips, the instance name (if assigned). For location, the Property inspector displays the x and y coordinates of the symbol's registration point.
- In the Info panel, view the instance's size and location; the location of its registration point; its red (R), green (G), blue (B), and alpha (A) values (if the instance has a solid fill); and the location of the pointer. The Position and Size section on the Properties Inspector displays the x and y coordinates of either the symbol's registration point or transformation point. You can toggle to view coordinates of either the registration point or transformation point.
- In the Movie Explorer, view the contents of the current document, including instances and symbols.

  View any actions assigned to a button or movie clip in the Actions panel.

Get information about an instance

1. Select the instance on the Stage.
2. Display the Property inspector (Window > Properties) or panel to use:
   - To display the Info panel, select Window > Info.
   - To display the Movie Explorer, select Window > Movie Explorer.
   - To display the Actions panel, select Window > Actions.

View the symbol definition for the selected symbol in the Movie Explorer

1. Click the Show Buttons, Movie Clips, and Graphics button at the top of the Movie Explorer.
2. Right-click (Windows) or Control-click (Macintosh), and select Show Symbol Instances and Go To Symbol Definition; or select these options from the menu in the upper-right corner of the Movie Explorer.

Jump to the scene containing instances of a selected symbol

1. Display the symbol definitions.
2. Right-click (Windows) or Control-click (Macintosh), and select Show Movie Elements and Go To Symbol Definition; or select these options from the menu in the upper-right corner of the Movie Explorer.

Using camera in Animate CC

Camera in Animate CC allows animators to simulate a real-life camera. Previously, animators relied on third-party extensions of varying quality and compatibility, or modified their animations to mimic a camera's movement. Animators can use the following features that are integral to any motion film.

- Panning with the subject of the frame
- Zooming in the object of interest for dramatic effect
- Zooming out of a frame to remind the viewer of a larger picture
- Modifying the focal point to shift the attention of the viewer from one subject to another
- Rotating the camera
- Using color tint or filters to apply color effects on a scene

When you set a camera view for your composition, you look at the layers as though you were looking through that camera. You can also add tweens or keyframes on a camera layer.

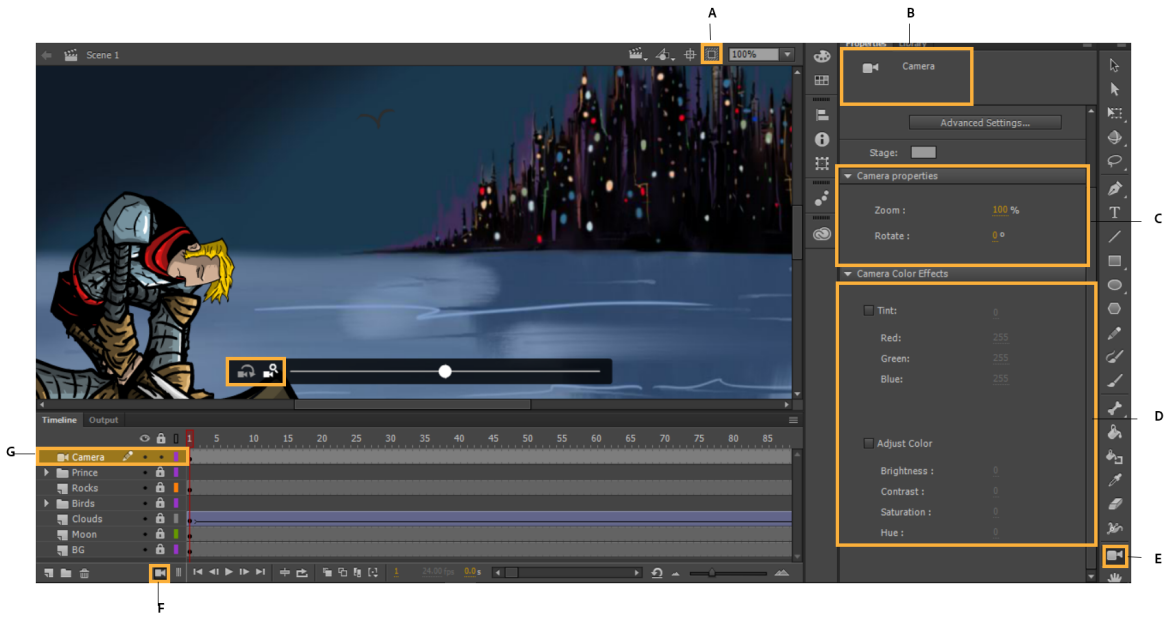
Camera tool is available for all the built-in doc-types in Animate CC - HTML Canvas, WebGL, and Actionscript.

Enabling or disabling the camera

Use any of the following options to enable the camera tool:

- Click the camera icon from the tools panel.
- Click the Add/Remove camera button from the timeline.

When a camera is enabled, a stage boundary is displayed in the same color as the camera layer.



Camera workspace
***A** Stage outline **B** Camera icon **C** Camera properties **D** Camera color effects **E** Camera tool **F** Camera icon **G** Camera layer*

The stage now behaves as a camera for the document. A new camera layer with the camera object is added to the **Timeline** panel. When you select the camera tool, the camera icon is enabled in the Property inspector.

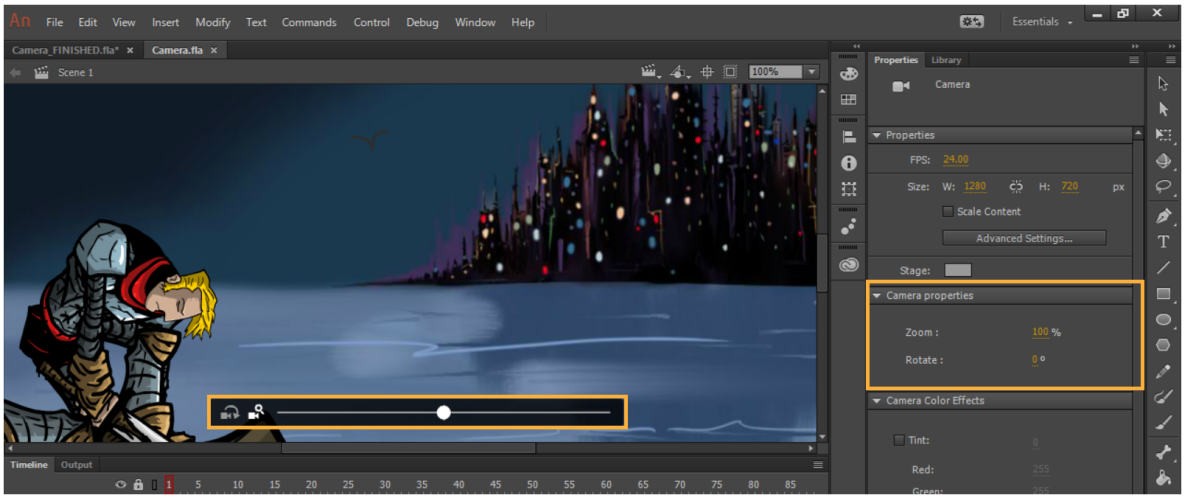
When the camera is enabled:

- The current document is placed in the camera mode.
- The stage is turned into a camera.
- Camera border is visible in the stage boundary.
- Camera layer is selected.

Zooming, rotating, or panning the camera

Zooming the camera

1 Use the onscreen zoom controls to zoom the object or set the zoom values in the Camera Properties panel.



Zoom and rotate

2 To zoom into the scene, modify the zoom values or select the slider bar at the bottom of the stage.

3 To zoom in the content, move the slider toward the + side and to zoom out the content move the slider toward - side.

4 To enable infinite level of zoom values on either side, release the slider to snap it back to the middle position.

Rotating the camera

1 Use the onscreen zoom controls to rotate the object or set the Rotate values in the camera properties panel.

2 To specify the rotation effect on each layer, modify the rotate values or use the rotation slider controls to manipulate the rotation.

3 To enable infinite levels of rotation on either side, release the slider to snap it back into the resting position. The number in the middle of the control indicates the degrees of rotation currently applied.

Panning the camera

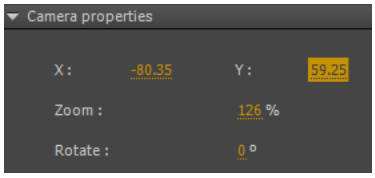
1 Click the camera bounding box and drag anywhere within the camera layer on the stage.

2 To pan the selected object, scroll up or down or use the shift key to pan horizontally or vertically without any tilt.

3 When the camera tool is active, any drag action is a pan operation within the camera boundary.

Using camera panning controls

You can use camera coordinates **X** and **Y** in **Camera properties** of camera Property inspector to pan the camera with accuracy.



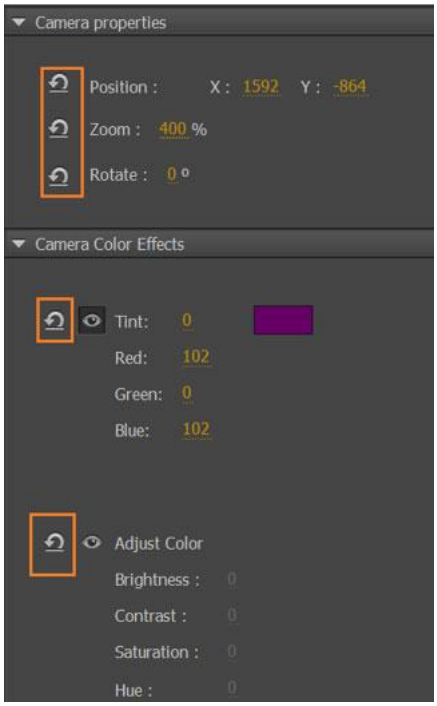
Camera coordinate controls to pan

To pan objects in horizontal direction, move the mouse over x coordinate value and drag the slider to right or left.

To pan objects in vertical direction, move the mouse over y coordinate value and drag the slider to right or left.

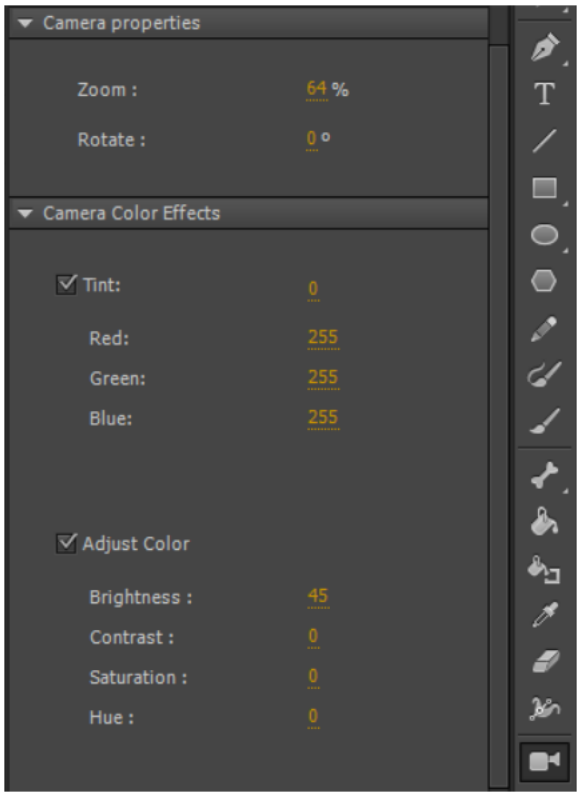
Reset options for camera effects

You can reset the changes that you make with camera for pan, zoom, rotation, and color effects whenever you want to go back to original settings. To retain your previous property values, click the reset icon next to each of the properties



Applying tint on a camera layer

1 Select **Camera** > **Properties** panel. To enable or disable the tint effect, select the **Tint** check box.



Camera properties

2 Modify the tint value (percentage) and the RGB tint color for the current frame.

Note:

This feature is supported for AS3 and WebGL document types.

Adjusting color filters on a camera layer

1 In the camera properties panel, select the Adjust Color check box to enable or disable the filter effect.

2 Modify the Brightness, Contrast, Saturation, and Hue values for the current frame. The acceptable range for Brightness, Contrast, Saturation is -100 % to 100 %, and Hue -180° to 180°.

Note:

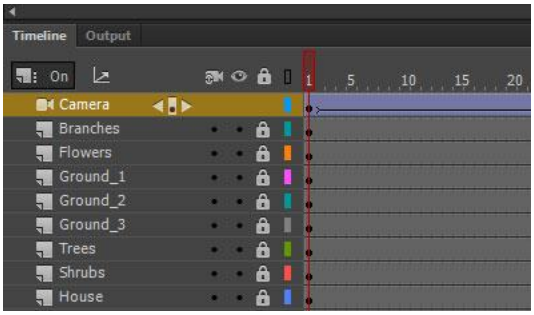
This feature is supported only for AS3 document type.

Creating parallax effect with camera and layer depth

As a game designer or developer, you want to create an immersive experience for a game. By using different objects of a game in the foreground and background layers, you can control the speed and position of these objects. By keeping the camera focused at a constant focal point, you can move the objects at different speeds to create a three-dimensional effect. In Animate CC, while creating your 2D animations you can achieve this effect by using camera and the layer depth feature. You can create parallax effect for objects by changing depths of layers using the **Layer Depth** panel. To use layer depth, click **Window** > **Layer Depth**.

Using advanced layersfor more information on layer depth.

1. Create multiple objects on different layers in Animate.
2. Add different layer depths to each layer.
3. Add camera layer by clicking the camera tool.



Camera layer in layer depth

You can view the depth and perspective of objects with this effect.

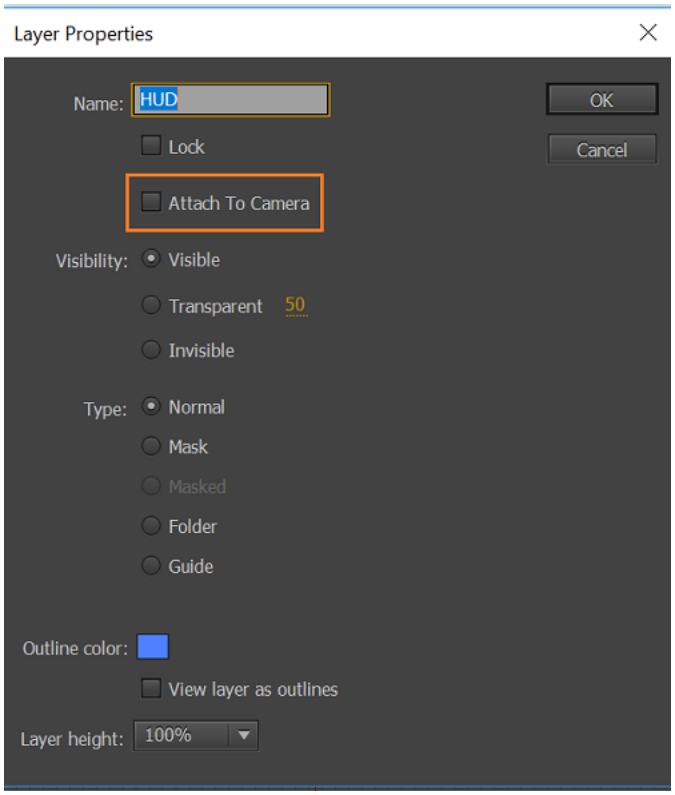
- The objects that are closer to the camera move faster than the objects that are far-away from the camera.
- When camera layer is at 0 value, the objects closer to the camera possess lower positive number. And, the objects far-away from the camera possess high positive number. The layers that are behind the camera possess negative numbers.

Video depicting parallax effect and camera z-depth

Video depicting parallax effect and camera z-depth

Locking a layer with camera

As an animator or a game designer, you want to make some objects of the animation to stick to the view of the camera. For example, an action button, a heads up display in a game displaying the time meter, or a gun. In such cases, you have to keep the asset locked with the camera movement. The **Attach To Camera** feature in Animate enables you to achieve this effect.



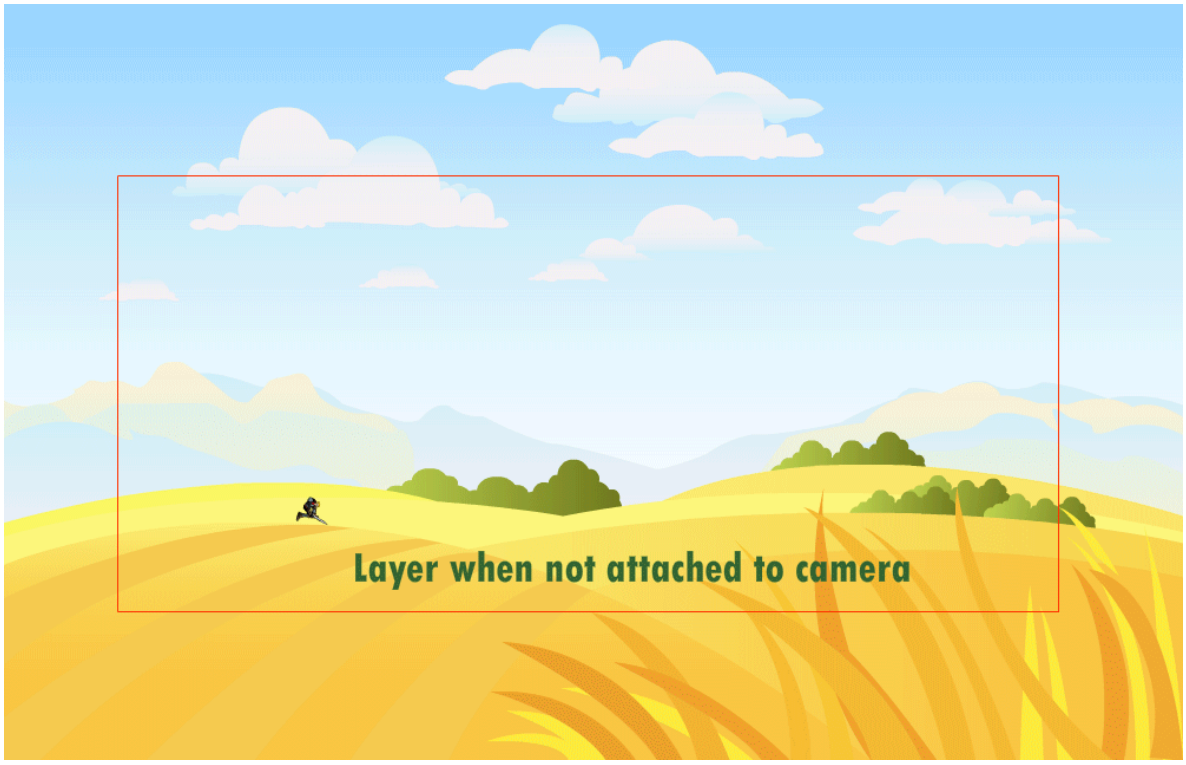
Locking a layer with camera

When you attach a layer to the camera, objects in that layer are pinned to the camera and always move along with the camera. So, they appear to be unaffected by camera movements in the output.

You can attach a single layer to camera by clicking the dot in the attach camera icon's column. If the layer is attached to camera, a representative icon appears next to that layer name.

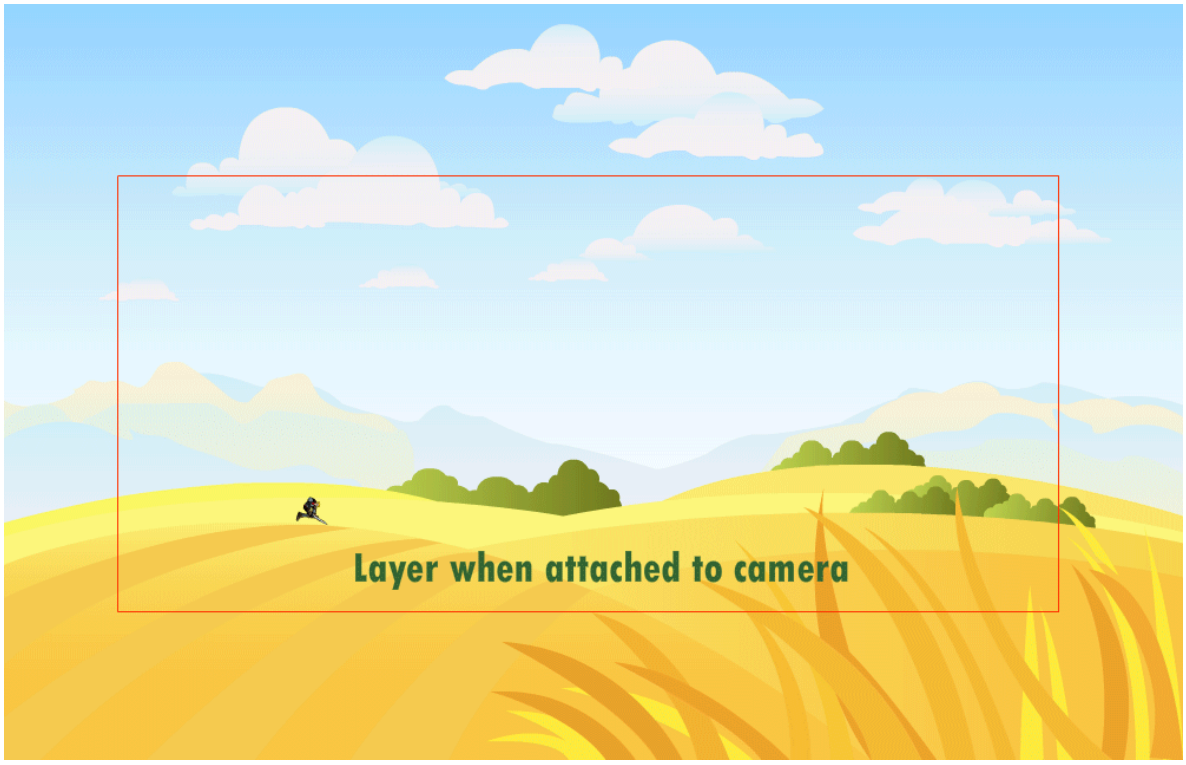
The following illustrations depict the layer behavior before and after attaching it to the camera:

Illustration depicting an animation when layer is not attached to camera:



Layer without camera lock

Illustration depicting an animation when layer is attached to the camera:



Layer with camera lock

You can also attach or detach all the layers from the camera by clicking the attach camera icon in the timeline.

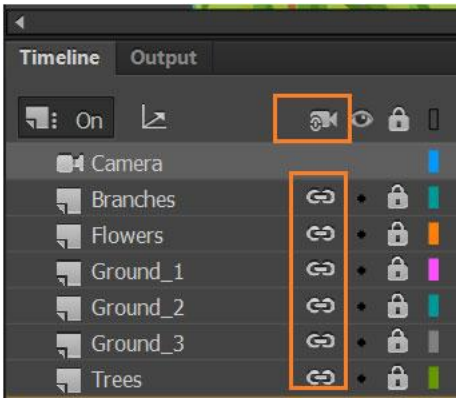


Illustration showing all the layers when they are attached to camera

Using camera at runtime

You can introduce, access, or manage the camera at runtime using the camera APIs for AS3, WebGL, and HTML canvas document types. The list of camera runtime APIs for AS3, WebGL, and HTML canvas document types are as follows:

Type	Class	Example	Description
AS3	*VirtualCamera*	*import fl.VirtualCamera;* *var cameraObj = VirtualCamera.getCamera(root);*	Get the camera object. To get or set camera properties at runtime.
HTML canvas	*VirtualCamera*	*var cameraObj = AdobeAn.VirtualCamera.getCamera(exportRoot);*	Get the camera object. Ensure that you enable the camera while authoring the content.
WebGL	*VirtualCamera*	*var cameraObj = flwebgl.VirtualCamera.getCamera(stage.getPlayer());*	Get the camera object. Ensure that you enable the camera while authoring the content.

Note:

All the methods are applicable for AS3 document type. Some of the methods are not available for WebGL and HTML canvas types. The methods that are applicable/not applicable for WebGL and HTML canvas are indicated in the last two columns of the table.

Virtual camera methods

S.No	Method	Prototype	Example	Description	HTML canvas	WebGL
1	*getPosition*	*getPosition():Object*	trace(cameraObj.getPosition().x, cameraObj.getPosition().y, cameraObj.getPosition().z);	Return object with x,y, and z properties that specify current location of camera.	Yes	Yes
2	*setPosition*	*setPosition(posX:Number,posY:Number, posZ:Number=0):void*	*cameraObj.setPosition(100,100,100);*	Move camera to absolute position given by input parameters. Default value = 0.	Yes	Yes
3	*moveBy*	*moveBy(tx:Number,ty:Number,tz:Number=0): void*	*cameraObj.moveBy(100,100,100);*	Move camera relative to current position by *tx,ty,or tz*.**Note:** '*tz*' is meaningful only if layer depth is enabled, default value = 0.	Yes	Yes
4	*resetPosition*	*resetPosition():void*	*cameraObj.resetPosition();*	Reset camera position to the original position i.e (0,0,0).	Yes	Yes
5	*getZoom*	*getZoom():Number*	*trace(cameraObj.getZoom());*	Return the current zoom value of camera. Default is 100%.	Yes	Yes
6	*setZoom*	*setZoom(zoom:Number):void*	*cameraObj.setZoom(120);*	Zoom camera to absolute value given by input parameter in percentage.	Yes	Yes

7	*zoomBy*	*zoomBy(zoom:Number):void*	*cameraObj.zoomBy(100);*	Zoom camera to relative to the current zoom value (unit is percentage).	Yes	Yes
8	*resetZoom*	*resetZoom():void*	*cameraObj.resetZoom();*	Reset camera zoom to it's default zoom value i.e 100%.	Yes	Yes
9	*getRotation*	*getRotation():Number*	*trace(cameraObj.getRotation());*	Return current angle of camera.	Yes	Yes
10	*setRotation*	*setRotation(angle:Number):void*	*cameraObj.setRotation(45);*	Rotate camera by absolute angle given as input parameters.	Yes	Yes
11	*rotateBy*	*rotateBy(angle:Number):void*	*cameraObj.rotateBy(60);*	Rotate camera relative to current angle given by input parameters.	Yes	Yes
12	*resetRotation*	*resetRotation():void*	*cameraObj.resetRotation();*	Reset camera angle to zero.	Yes	Yes
13	*setTint*	*setTint(tintColor:uint,tintPercent:Number):void*	*cameraObj.setTint(0x56FFFF, 68);*	Set camera tint using tint color(RGB) & tint percent (percentage of tint).	No	Yes
14	*setTintRGB*	*setTintRGB(red:uint,green:uint,blue:uint,tintPercent:Number):void*	*cameraObj.setTintRGB(0xff, 0, 0, 50);*	Set camera tint using decomposed color values R, G, B & *tintPercent* (percentage of tint).	No	Yes
15	*getTint()*	*getTint():Object*	var tint=cameraObj.getTint(); trace("color:",tint.color, "percentage:",tint.percent);	Return object with two properties: 'percent' & 'color'.	No	Yes
16	*getTintRGB*	*getTintRGB():Object*	var tint = cameraObj.getTintRGB(); trace("tint color red:", tint.red,"green:",tint.green," *blue:",tint.blue,"tint percent: ",tint.percent);*	Return object with four properties: 'percent' , 'red', 'green', and 'blue'.	No	Yes
17	*resetTint*	*resetTint()*	*cameraObj.resetTint();*	Remove camera tint.	No	Yes

18	*setColorFilter*	*setColorFilter(brightness:Number, contrast:Number,saturation:Number, hue: Number):void*	cameraObj.setColorFilter(100,-50, 50,-100);	Set camera color filter using decomposed values of (Brightness,Contrast,saturation,hue).	No	No
19	*resetColorFilter*	*resetColorFilter()*	*cameraObj.resetColorFilter();*	Remove color filter.	No	No
20	*reset*	*reset()*	*cameraObj.reset();*	Reset all camera properties to default.	Yes	Yes
21	*setZDepth*	*setZDepth(zDepth: Number):void*	*cameraObj.setZDepth(200);*	Set camera's Z Depth value.	Yes	No
22	*getZDepth*	*getZDepth():Number*	*trace(cameraObj.getZDepth());*	Return current Z Depth value of camera.	Yes	No
23	*pinCameraToObject*	*pinCameraToObject(object:DisplayObject, offsetX:Number=0, offsetY:Number=0, offsetZ=0)*	cameraObj.pinCameraToObject (getChildByName("InstanceName"), 200,50);	Camera keeps following the object provided as input parameter at runtime. If offsetX, offsetY & offsetZ are provided, camera follows (x+offsetX,y+offsetY, z+offsetZ).	Yes	Yes
24	*setPinOffset*	*setPinOffset(offsetX:Number, offsetY:Number,offsetZ:Number)*	*cameraObj.setPinOffset(-60,0);*	Change offsetX & offsetY for camera's pinning with object. Camera follows object regarding (x+offsetX, y+offsetY, zDepth+z) point at runtime.	Yes	Yes
25	*unpinCamera*	*unpinCamera()*	*cameraObj.unpinCamera();*	Remove camera's pinning with any object.	Yes	Yes
26	*setCameraMask*	*setCameraMask(maskObj:DisplayObject)*	*cameraObj.setCameraMask(maskObj);*	Set maskObj as a mask over camera.	No	No
27	*removeCameraMask*	*removeCameraMask()*	*cameraObj.removeCameraMask();*	Remove mask from camera.	No	No

Access camera as a movie clip object

Type	Method	Prototype	Example
AS3	getCameraAsMovieClip	getCameraAsMovieClip(container:DisplayObject):MovieClip	*var cameraObj=fl.VirtualCamera.getCameraAsMovieClip(root);*
HTML canvas	getCameraAsMovieClip	*getCameraAsMovieClip(container:DisplayObject):MovieClip*	*var cameraObj=AdobeAn.VirtualCamera.getCamera(exportRoot);*
WebGL	getCameraAsMovieClip	*getCameraAsMovieClip(container:DisplayObject):MovieClip*	var cameraObj=flwebgl.VirtualCamera.getCameraAsMovieClip(this);

Masking objects at runtime (for AS3 document)

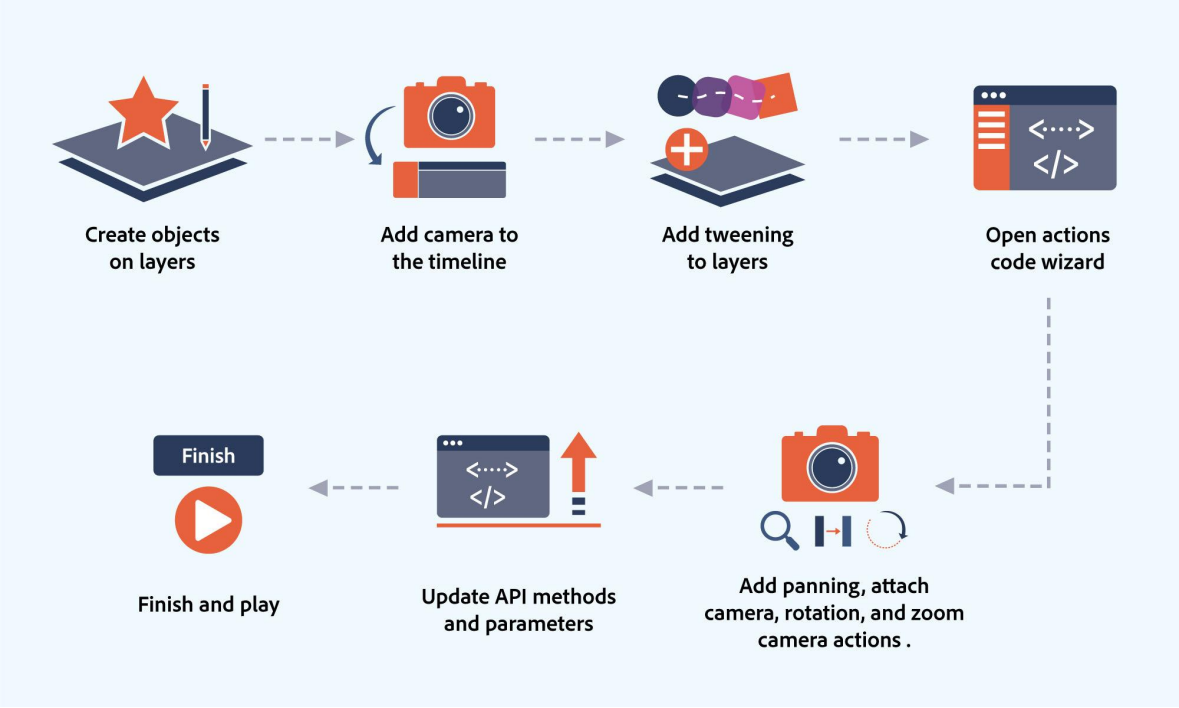
You can mask the objects at runtime using the following camera API code:

import fl.VirtualCamera; fl.VirtualCamera.getCamera(root).setCameraMask(torch);

A sample screenshot from animation, when you use a oval shaped mask, is displayed as follows:

Creating interactive camera animations with actions code wizard

A step-by-step approach to creating animation using interactive camera is depicted in the following flow diagram. You can use actions code wizard in HTML canvas document.


Create objects on layers
Add camera to the timeline
Add tweening to layers
Open actions code wizard
Add panning, attach camera, rotation, and zoom camera actions .
Update API methods and parameters
Finish and play
Finish

You can find a sample video below, which demonstrates the usage of interactive camera. You can observe how you can vary the focus at runtime on parachute, jet pack, and the urban landscape at various intervals.

Video demonstrating the usage of camera at runtime

Video demonstrating the usage of camera at runtime

Cropping the object on stage

To crop the content flowing outside the stage, click **Clip the Content Outside Stage** button . With the camera and stage view, you can view the content within the camera bounds.

How to use sound in Adobe Animate

Overview

Adobe Animate offers several ways to use sound. Make sounds that play continuously, independent of the Timeline, or use the Timeline to synchronize animation to a sound track. Add sounds to buttons to make them more interactive, and make sounds fade in and out for a more polished sound track.

There are two types of sounds in Animate: event sounds and stream sounds. An event sound must download completely before it begins playing, and it continues playing until explicitly stopped. Stream sounds begin playing as soon as enough data for the first few frames has been downloaded; stream sounds are synchronized to the Timeline for playing on a website.

If you are creating Animate content for mobile devices, Animate also lets you include device sounds in your published SWF file. Device sounds are encoded in the device's natively supported audio format, such as MIDI, MFi, or SMAF.

You can use shared libraries to link a sound to multiple documents. You can also use the ActionScript® 2.0 *onSoundComplete* event or ActionScript® 3.0 *soundComplete* event to trigger an event based on the completion of a sound.

You can load sounds and control sound playback using prewritten behaviors or media components; the latter also provide a controller for stop, pause, rewind, and so on. You can also use ActionScript 2.0 or 3.0 to load sounds dynamically.

For more information, see *attachSound (Sound.attachSound method)* and *loadSound (Sound.loadSound method)*in ActionScript 2.0 Language Reference or *Sound class* in ActionScript 3.0 Language and Components Reference.

Note:

ActionScript 2.0 and ActionScript 1.0 are not supported with Animate CC.

Importing sounds

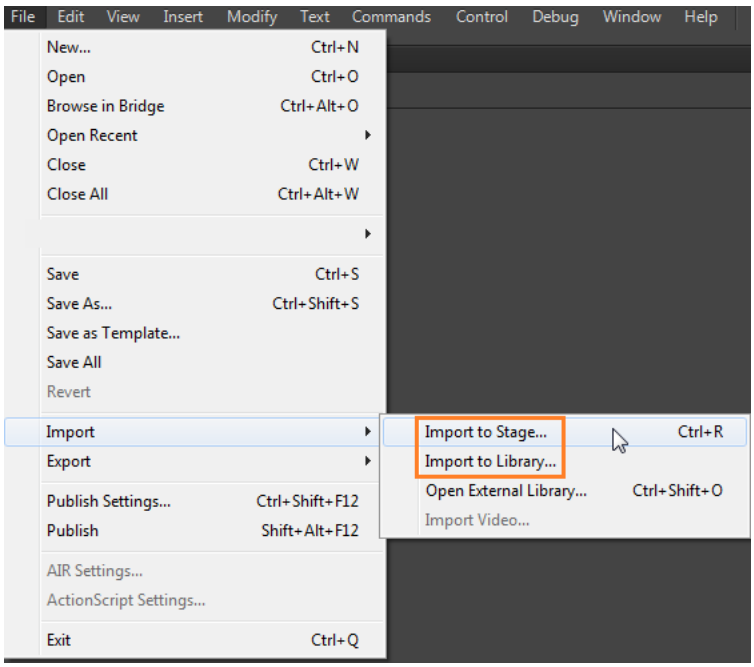
You place sound files into Animate by importing them into the library or directly importing them to stage.

The File > Import > Import to Library menu option places the audio only in the library, and not on the timeline.

When you import an audio file using File > Import > Import to Stage menu option or by dragging and dropping the audio file directly to the timeline, the audio will be placed on active frame of the active layer. If you drag and drop multiple audio files, only one audio file will be imported because one frame can contain only one audio.

To import audio, use one of the following methods:

- To import an audio file to library, select File > Import > Import To Library and select the audio file that you want to import.
- To import an audio file to stage, select File > Import > Import To Stage and select the audio file that you want to import.
- Drag-and-drop the audio file directly to the stage.



Note:

You can also drag a sound from a common library into the library for the current document.

Animate stores sounds in the library along with bitmaps and symbols. You need only one copy of a sound file to use that sound multiple ways in your document.

If you want to share sounds among Animate documents, you can include the sounds in shared libraries.

Animate includes a Sounds library containing many useful sounds that can be used for effects. To open the Sounds library, choose Window > Common Libraries > Sounds. To import a sound from the Sounds library to your Animate file, drag the sound from the Sounds library to the Library panel of your Animate file. You can also drag sounds from the Sounds library to other shared libraries.

Sounds can use large amounts of disk space and RAM. However, mp3 sound data is compressed and smaller than WAV or AIFF sound data. Generally, when using WAV or AIFF files, it's best to use 16-22 kHz mono sounds (stereo uses twice as much data as mono), but Animate can import either 8- or 16-bit sounds at sample rates of 11, 22, or 44 kHz. Sounds recorded in formats that are not multiples of 11 kHz (such as 8, 32, or 96 kHz) are resampled when imported into Animate. Animate can convert sounds to lower sample rates on export.

If you want to add effects to sounds in Animate , it's best to import 16-bit sounds. If you have limited RAM, keep your sound clips short or work with 8-bit sounds instead of 16-bit sounds.

Note:

To import or play sounds in Animate, pre-installing QuickTime or iTunes is not needed.

Supported sound file formats

You can import the following sound file formats into Animate:

- Adobe Sound (.asnd). This is the native sound format of Adobe® Soundbooth™.
- Wave (.wav)
- AIFF (.aif, .aifc)

- mp3

  You can import these additional sound file formats:

- Sound Designer® II (.sd2)
- Sun AU (.au, .snd)
- FLAC (.flac)
- Ogg Vorbis (.ogg, .oga)

Note:

- The ASND format is a non-destructive audio file format, native to Adobe Soundbooth. ASND files can contain audio data with effects that can be modified later, Soundbooth multitrack sessions, and snapshots that allow you to revert to a previous state of the ASND file.
- WebGL and HTML5 Canvas doctypes support only MP3 and WAV formats.

Adding sounds in Animate

Adding a sound directly from your computer to the Timeline

You can import audio directly from your computer over to the Timeline by using any of the following methods:

- Select **File** > **Import** > **Import to Stage** and select the audio file that you want to import.
- Drag and drop the audio file to the stage/timeline.

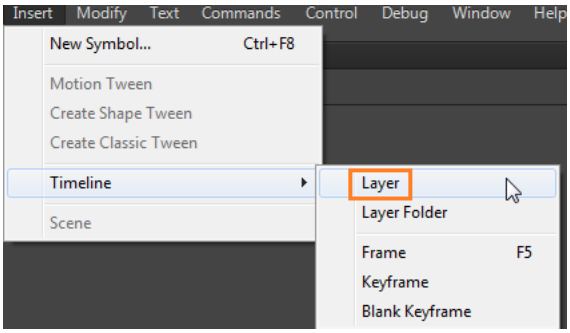
Note that you can only add one audio file at a time. Dragging and dropping multipe audio files will import only one audio file to the timeline.

Adding a sound from the library to the Timeline

You can add a sound to a document using the library, or you can load a sound into a SWF file during runtime, using the *loadSound* method of the Sound object. For more information, see *Sound Class* in the ActionScript 3.0 Reference.

1 Import the sound into the library if it has not already been imported.

2 Select **Insert** > **Timeline** > **Layer**.



3 With the new sound layer selected, drag the sound from the Library panel onto the Stage. The sound is added to the current layer.

You can place multiple sounds on one layer or on layers containing other objects. However, it is recommended that each sound be placed on a separate layer. Each layer acts as a separate sound channel. The sounds on all layers are combined when you play the SWF file.

4 In the Timeline, select the first frame that contains the sound file.

5 Select **Window > Properties**, and click the arrow in the upper-right corner to expand the Property inspector.

6 In the Property inspector, select the sound file from the Sound pop-up menu.

7 Select an effect option from the Effects pop-up menu:

None Applies no effects to the sound file. Select this option to remove previously applied effects.

Left Channel/Right Channel Plays sound in the left or right channel only.

Fade Left To Right/Fade Right To Left Shifts the sound from one channel to the other.

Fade In Gradually increases the volume of a sound over its duration.

Fade Out Gradually decreases the volume of a sound over its duration.

Custom Lets you create custom in and out points of sound using the Edit Envelope.

Note:

Effects are not supported on WebGL and HTML5 Canvas documents.

8 Select a synchronization option from the Sync pop-up menu:

Event Synchronizes the sound to the occurrence of an event. An event sound plays when its starting keyframe first appears and the plays in its entirety, independently of the playhead in the Timeline, even if the SWF file stops playing. Event sounds are mixed when you play your published SWF file.

If an event sound is playing and the sound is instantiated again (for example, by the user clicking a button again, or the playhead passing the starting keyframe of the sound), the first instance of the sound continues to play and another instance of the same sound begins to play simultaneously. Keep this in mind when using longer sounds, as they can potentially overlap, causing unintended audio effects.

Start The same as Event, except that if the sound is already playing, no new instance of the sound plays.

Stop Silences the specified sound.

Stream Synchronizes the sound for playing on a website. Animate forces animation to keep pace with stream sounds. If Animate can't draw animation frames quickly enough, it skips frames. Unlike event sounds, stream sounds stop if the SWF file stops playing. Also, a stream sound can never play longer than the length of the frames it occupies. Stream sounds are mixed when you publish your SWF file.

An example of a stream sound is the voice of a character in an animation that plays in multiple frames.

Animate remembers the audio sync options in property inspector. If a sound is selected from the "Sound" section of the Properties Inspector, then on trying to set another sound on a new keyframe from the Properties Inspector, Animate remembers the sync options "Stream" or "Event" of the previous sound.

Note:

If you use an mp3 sound as a stream sound, you must recompress the sound for export. You can export the sound as an mp3 file, with the same compression settings that it had on import.

Stream setting is not supported in WebGL and HTML5 Canvas documents.

9 Enter a value for Repeat to specify the number of times the sound should loop, or select Loop to repeat the sound continuously.

For continuous play, enter a number large enough to play the sound for an extended duration. For example, to loop a 15-second sound for 15 minutes, enter 60. Looping stream sounds is not recommended. If a stream sound is set to loop, frames are added to the file and the file size is increased by the number of times the sound is looped.

10 To test the sound, drag the playhead over the frames containing the sound or use commands in the Controller or the Control menu.

Video

Removing a sound from the Timeline

1 In the Timeline layer containing the sound, select a frame that also contains the sound.

2 In the Property inspector, go to the Sound section and select None from the Name menu.

Animate deletes the sound from the Timeline layer.

Adding a sound to a button

You can associate sounds with the different states of a button symbol. Because the sounds are stored with the symbol, they work for all instances of the symbol.

1 Select the button in the Library panel.

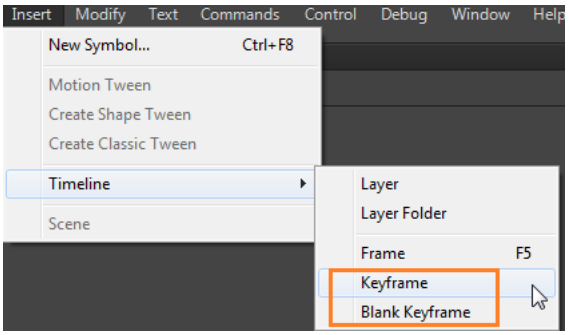
2 Select Edit from the Panel menu in the upper-right corner of the panel.

3 In the button's Timeline, add a layer for sound (**Insert** > **Timeline** > **Layer**).

4 In the sound layer, create a regular or blank keyframe to correspond with the button state to which you want to add a sound.

Click **Insert** > **Timeline** > **Keyframe** or **Insert** > **Timeline** > **Blank Keyframe**.

For example, to add a sound that plays when you click the button, create a keyframe in the frame labeled Down.



5 Click the keyframe you created.

6 Select **Window** > **Properties**.

7 In the Property inspector, select a sound file from the Sound pop-up menu.

8 Select Event from the Sync pop-up menu.

To associate a different sound with each of the button's keyframes, create a blank keyframe and add another sound file for each keyframe. You can also use the same sound file and apply a different sound effect for each button keyframe.

Synchronize a sound with animation

To synchronize a sound with animation, you start and stop the sound at keyframes.

1 Add a sound to the Timeline in its own layer (see above for instructions).

2 To synchronize this sound with an event in the scene, create a beginning keyframe for the sound that corresponds to the keyframe of the event in the scene that you want to trigger the sound. You can select any of the synchronization options described above (see Add a sound to the Timeline).

3 Create a keyframe in the sound layer's Timeline at the frame where you want the sound to end. A representation of the sound file appears in the Timeline.

4 Select **Window** > **Properties**, and click the arrow in the upper-right corner to expand the Property inspector.

5 In the Property inspector, select the same sound from the Sound pop-up menu.

6 Still in the Property inspector, select Stop from the Sync pop-up menu.

When you play the SWF file, the sound stops playing when it reaches the ending keyframe.

7 To play back the sound, drag the playhead in the Timeline.

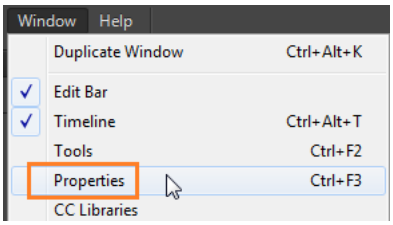
Editing sounds

Editing a sound in Animate

In Animate, you can define the starting point of a sound or control the volume of the sound as it plays. You can also change the point at which a sound starts and stops playing. This is useful for making sound files smaller by removing unused sections.

1 Add a sound to a frame, or select a frame that already contains a sound.

2 Select **Window** > **Properties**.



3 Click the Edit button on the right side of the Property inspector.

4 Do any of the following:

- To change the start and end points of a sound, drag the Time In and Time Out controls in the Edit Envelope.
- To change the sound envelope, drag the envelope handles to change levels at different points in the sound. Envelope lines show the volume of the sound as it plays. To create additional envelope handles (up to eight total), click the envelope lines. To remove an envelope handle, drag it out of the window.
- To display more or less of the sound in the window, click the Zoom In or Out buttons.
- To switch the time units between seconds and frames, click the Seconds and Frames buttons.

5 To hear the edited sound, click the Play button.

Edit a sound in Soundbooth

If you have Adobe Soundbooth installed, you can use Soundbooth to edit sounds you have imported into your Animate file. After making changes in Soundbooth, when you save the file and overwrite the original, the changes are automatically reflected in the Animate file.

If you change the filename or format of the sound after editing it, you will need to re-import it into Animate.

Note:

Soundbooth is available only on Windows computers and Intel®-based Macintoshes.

To edit an imported sound in Soundbooth:

1. Right-click (Windows) or Ctrl-click (Macintosh) the sound in the Library panel.
2. Choose Edit in Soundbooth from the context menu. The file opens in Soundbooth.
3. Edit the file in Soundbooth.
4. After completing the changes, save the file. To save the changes in a non-destructive format, choose the ASND format. If you save the file in a different format from the original, you will need to re-import the sound file into Animate.
5. Return to Animate to see the edited version of the sound file in the **Library** panel.

Note:

You cannot edit sounds from the Sounds library (Window > Common Libraries > Sounds) with the Edit in Soundbooth command. To edit these sounds in Soundbooth, open Soundbooth and select the sound from the Resource Central panel. Edit the sound and then import it into Animate.

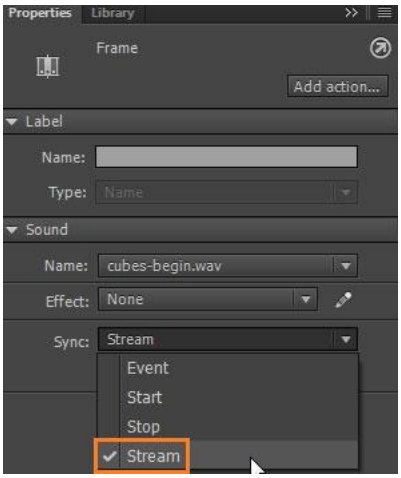
Split or loop a sound on timeline

Splitting a sound on timeline

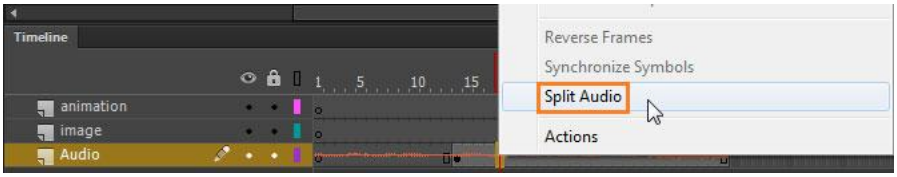
You can split the stream audio embedded on the timeline using the Split Audio context menu. Split Audio enables you to pause the audio when it is necessary and then resume the audio playback from the point it was stopped at a later frame on the timeline.

To split an audio clip on your timeline:

1. Select **File > Import > Import to library**.
2. Select the audio clip and import it to library.
3. Create a new layer on your timeline and add the audio clip to the layer.
4. Under **Properties > Sound**, select the Sync type as Stream.



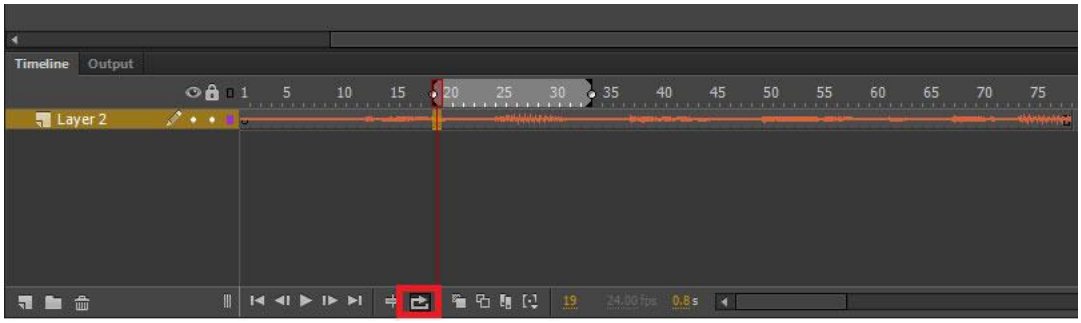
5. Right-click on the frame at which you want to split the audio and click **Split Audio**.



Loop sound on timeline

Audio looping means repeating a small section of sound continuously over a number of frames on your timeline. With the "loop" option turned on in the timeline, you can loop streaming audio within a range of frames along with other animations.

To create a loop, just turn on the loop option on your timeline as follows:



The Audio Looping button on the timeline

Using sounds in Flash Lite

Adobe® Flash® Lite supports two types of sound: standard Animate sounds, like those used in Animate desktop applications, and device sounds. Flash Lite 1.0 supports device sounds only; Flash Lite 1.1 and 2.x support both standard sounds and device sounds.

Device sounds are stored in the published SWF file in their native audio format (such as MIDI or MFi); during playback, Flash Lite passes the sound data to the device, which decodes and plays the sound. Because you can't import most device audio formats into Animate, you instead import a proxy sound in a supported format (such as mp3 or AIFF) that is replaced with an external device sound that you specify.

You can use device sounds only as event sounds—you can't synchronize device sounds with the Timeline as you can with standard sounds.

Flash Lite 1.0 and Flash Lite 1.1 do not support the following features available in the desktop version of Flash® Player:

- The ActionScript Sound object
- Loading of external mp3 files
- The Speech Audio Compression option

For more information, see "Working with Sound, Video, and Images" in *Developing Flash Lite 2.x Applications* or "Working with Sound" in *Developing Flash Lite 1.x Applications*.

Exporting SVG files

What is SVG?

Scalable Vector Graphics (SVG) is an XML markup language for describing two-dimensional images. SVG files provide resolution independent, HiDPI graphics on the web, in print, and on mobile devices in a compact format. You can style an SVG with CSS, and the support of scripting and animation makes SVG an integral part of the web platform.

Some common image formats of the web, such as GIF, JPEG, and PNG, are bulky and are usually of low resolution. The SVG format offers a lot more value by allowing you to describe images in terms of vector shapes, text, and filter-effects. SVG files are compact and provide high-quality graphics on the web and on handheld devices that have resource constraints, as well. You can magnify the view of an SVG image on-screen without compromising on sharpness, detail, or clarity. In addition, SVG provides superior support for text and colors, which ensures that you will see images as they appear on Stage. The SVG format is entirely XML-based and offers many advantages to developers and other users alike.

The export SVG workflow in Animate CC

Animate CC allows you to export to SVG format, version 1.1. You can create visually rich artwork using powerful design tools available within Animate, and then, export to SVG.

In Animate CC, you can export selected frames and keyframes of an animation. And, because the exported artwork is Vector, the resolution of the image is high even on scaling to different sizes.

The SVG export feature replaces the erstwhile FXG export (dropped from Animate CC **(June, 2013)**). You will find that performance of SVG export feature and the quality of the output is far superior. Also, in comparison to FXG, loss of content is minimal in SVG.

Artwork with Filter effects

With SVG, filter effects may not appear exactly the same as in Animate, since there is no one-to-one mapping between filters available in Animate and SVG. However, Animate Pro leverages combinations of different primitive filters available within SVG to simulate a similar effect.

Handling multiple symbols

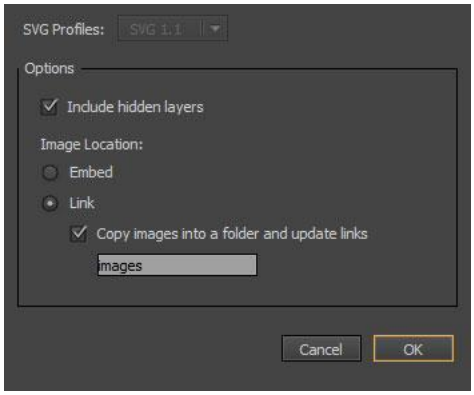
The SVG export handles multiple symbols seamlessly, without any loss of content. The output closely resembles the artwork on Stage within Animate.

Exporting artwork in SVG format

1. In Animate CC, scrub or move the playhead to the appropriate frame.
2. Select **File** > **Export** > **Export Image**. or select **File** > **Publish Settings** (select the **SVG Image** option in the **Other Formats** section.)
3. Enter or browse to the location where you want to save the SVG file. Ensure that you select SVG as the Save As type.
4. Click **Ok**.

5 On the Export SVG dialog, choose to Embed or Link to your SVG file.

- **Include Hidden Layers** Exports all hidden layers in the Animate document. Deselecting Export Hidden Layers prevents all layers (including layers nested inside movie clips) marked as hidden from being exported in the resulting SVG. This lets you easily test different versions of Animate documents by making layers invisible.
- **Embed**: Embeds a bitmap in the SVG file. Use this option to if you want to directly embed bitmaps within the SVG file.
- **Link**: Provides a link to the path of bitmap files. Use this option when you do not want to embed, but provide link to the bitmaps from the SVG file. If you select **Copy Images to Folder** option, the bitmaps will be saved inside the images folder created at the location where the SVG file is exported. When Copy **Images to Folder** option is not selected, the bitmaps will be referenced in the SVG file from their original source location. In case the bitmap source location is unavailable then they will be embedded inside the svg file.
- **Copy Images to */Images* folder**: Allows you to copy the bitmap to the */Images.* The */Images* folder, if it does not already exist, is created in the export location of the SVG.



? Click **Ok**.

Note:

Some Animate features are not supported by SVG format. Content created using these features are either removed or defaulted to a supported feature when exporting. For more information, see this article.

Alternatively, you could also use the Publish Settings dialog to export SVG files from within Animate CC (**File** > **Publish Settings**). Select the **SVG** option from the Other formats section to export SVG files.

Note:

It is recommended that you view SVG on modern browsers with latest updates only. This is because, some graphic filters and color effects may not render correctly on older versions of browsers such as Internet Explorer 9.

Interchanging SVG files with Adobe Illustrator

Animate CC enables interchanging of content with Adobe Illustrator. This workflow is a replacement for the FXG Export feature that was dropped with Animate CC (13.0). You can export SVG files from within Animate, and import them within Adobe Illustrator. For more information about using SVG files within Adobe Illustrator, see this Help Topic.

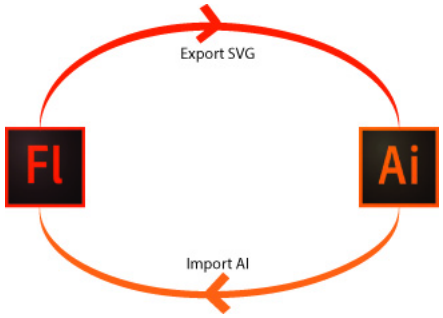
Use this workflow if you want to make granular edits to your artwork and add enriching detail. You may also use Illustrator to add effects, such as drop shadow, to the artwork.

To edit SVG files within Adobe Illustrator and use the edited content within Animate, do the following:

1 In Animate CC, export to SVG.

2 Edit your artwork by opening the SVG file using Adobe Illustrator.

3 Save the SVG file as an .ai file, and import within Animate. For more information about using Illustrator files within Animate.



Create video files for use in Animate CC

Adobe Animate can incorporate digital video footage into web-based presentations. The FLV and F4V (H.264) video formats offer technological and creative benefits that let you fuse video together with data, graphics, sound, and interactive control. FLV and F4V video let you easily put video on a web page in a format that almost anyone can view.

How you choose to deploy your video determines how you create your video content, and how you integrate it with Animate. You can incorporate video into Animate in the following ways:

Stream video with Adobe Media Server You can host video content on Adobe® Media Server, a server solution optimized to deliver real-time media. Adobe Media Server uses the Real-Time Messaging Protocol (RTMP), a protocol designed for real-time server applications such as streaming video and audio content. You can host your own Adobe Media Server, or use a hosted Flash® Video® Streaming Service (FVSS). Adobe has partnered with several content delivery network (CDN) providers to offer hosted services for delivering on-demand FLV or F4V file video across high-performance, reliable networks. Built with Adobe Media Server and integrated directly into the delivery, tracking, and reporting infrastructure of the CDN network, FVSS provides the most effective way to deliver FLV or F4V files to the largest possible audience without the hassle of setting up and maintaining your own streaming server hardware and network.

To control video playback and provide intuitive controls for users to interact with the streaming video, use the FLVPlayback component, Adobe® ActionScript®, or the Open Source Media Framework (OSMF). For more information about using the OSMF, see the OSMF documentation.

Progressively download video from a web server If you don't have access to Adobe Media Server or FVSS, or your video needs are for a low-volume website with only limited amounts of video content, you can consider progressive downloading. Progressively downloading a video clip from a web server doesn't provide the real-time performance that Adobe Media Server does; however, you can use relatively large video clips, and keep the size of your published SWF files to a minimum.

To control video playback and provide intuitive controls for users to interact with the video, use the FLVPlayback component or ActionScript.

Embed video in the Animate document You can embed a small, short-duration video file directly into the Animate document, and publish it as part of the SWF file. Embedding video content directly into the Animate SWF file significantly increases the size of published file, and is only suitable for small video files (typically less then 10 seconds in length). In addition, the audio to video synchronization (also known as audio/video sync) can become mis-synchronized when using longer video clips embedded in the Animate document. Another disadvantage to embedding video within the SWF file is that you cannot update the video without republishing the SWF file.

Note:

When you try to publish your FLA with H264 video content on a layer that is neither a guide layer nor a hidden layer, a warning message appears that the platform you are publishing to does not support embedded H.264 videos.

Control video playback

You can control the playback of video in Animate using the FLVPlayback component, by writing custom ActionScript to play an external video stream, or by writing custom ActionScript to control the playback of video in the Timeline for embedded video.

FLVPlayback component Lets you quickly add a full-featured FLV playback control to your Animate document and provides support for both progressive downloading and streaming FLV or F4V files. FLVPlayback lets you easily create intuitive video controls for users to control video playback and apply pre-made skins, or apply your own custom skins to the video interface. For more information see The FLVPlayback component.

Open Source Media Framework (OSMF) The OSMF enables developers to easily choose and combine pluggable components to create high-quality, full-featured playback experiences. For more information, see the OSMF documentation.

Control external video using ActionScript Play back external FLV or F4V files in a Animate document at runtime using the *NetConnection* and *NetStream* ActionScript objects. For more information see Controlling external video playback with ActionScript.

You can use video behaviors (pre-written ActionScript scripts) to control video playback.

Control embedded video in the Timeline To control playback of embedded video files, you must write ActionScript to control the Timeline containing the video. For more information see Control video playback using the Timeline.

The Video Import Wizard

The Video Import Wizard simplifies the importing of video into a Animate document by guiding you through the process of selecting an existing video file, and importing the file for use in one of three different video playback scenarios. The Video Import Wizard provides a basic level of configuration for the import and playback method you choose, which you can later modify for your specific requirements.

The Video Import dialog box provides these video import options:

Load external video with playback component Imports the video and creates an instance of the FLVPlayback component to control video playback. When you are ready to publish the Animate document as a SWF and upload it to your web server, you must also upload the video file to either a web server or Adobe Media Server, and configure the FLVPlayback component with the location of the uploaded video file.

Embed FLV in SWF and play in timeline Embeds the FLV into the Animate document. When you import video this way, the video is placed in the Timeline where you can see the individual video frames represented in the Timeline frames. An embedded FLV video file becomes part of the Animate document.

note: Embedding video content directly into the Animate SWF file significantly increases the size of published file, and is only suitable for small video files. In addition, the audio to video synchronization (also known as audio/video sync) can become mis-synchronized when using longer video clips embedded in the Animate document.

Embed H.264 video in timeline Embeds H.264 videos into the Animate document. When you import a video using this option, it can be placed on the stage to be used as a guide for your animation at design time. Frames from the video will rendered on the stage as you scrub through or play the timeline. The audio for the relevant frames will also be played back.

Note:

- When you try to publish your FLA with H264 video content on a layer that is neither a guide layer nor a hidden layer, a warning message appears that the platform you are publishing to does not support embedded H.264 videos.

Video formats and Animate

To import video into Animate you must use video encoded in the FLV or H.264 format. The Video Import Wizard (File > Import > Import Video) checks video files that you select for import, and alerts you if the video might not be in a format that Animate can play. In the event that the video is not in either the FLV or F4V format, you can use Adobe® Media® Encoder to encode the video in the appropriate format.

Adobe Media Encoder

Adobe® Media® Encoder is a stand-alone encoding application employed by programs such as Adobe® Premiere® Pro, Adobe® Soundbooth®, and Animate for output to certain media formats. Depending on the program, the Adobe Media Encoder provides a specialized Export Settings dialog box that accommodates the numerous settings associated with certain export formats, such as Adobe Flash Video and H.264. For each format, the Export Settings dialog box includes a number of presets that are tailored for particular delivery media. You can also save custom presets, which you can share with others or reload as needed.

For information on encoding video in the H.264 or F4V format using Adobe Media Encoder, see Using Adobe Media Encoder.

The H.264, On2 VP6, and Sorenson Spark video codecs

When encoding video using Adobe Media Encoder, you can choose from three different video codecs with which to encode your video content for use with Animate:

H.264 Support for the H.264 video codec was incorporated into Flash Player beginning with version 9.0.r115. The F4V video format which uses this codec provides a significantly better quality-to-bitrate ratio than previous Flash video codecs, however, it is more computationally demanding than the Sorenson Spark and On2 VP6 video codecs released with Flash Player 7 and 8.

***note**: If you need to use video with alpha channel support for compositing, you must use the On2 VP6 video codec; F4V does not support alpha video channels.*

On2 VP6 The On2 VP6 codec is the preferred video codec to use when creating FLV files you intend to use with Flash Player 8 and higher. The On2 VP6 codec provides:

- Higher quality video when compared to the Sorenson Spark codec encoded at the same data rate
- Support for the use of an 8-bit alpha channel to composite video

  To support better quality video at the same data rate, the On2 VP6 codec is noticeably slower to encode and requires more processor power on the client computer to decode and play back. For this reason, carefully consider the lowest common denominator of computer you intend your viewing audience to use when accessing your FLV video content.

Sorenson Spark Introduced in Flash Player 6, the Sorenson Spark video codec should be used if you intend to publish Animate documents requiring backwards compatibility to Flash Player 6 and 7. If you anticipate a large user base that uses older computers, you should consider FLV files encoded with the Sorenson Spark codec, as it is much less computationally demanding to play back than either the On2 VP6 or H.264 codecs.

If your Animate content dynamically loads Flash Professional video (using either progressive download or Adobe Media Server), you can use On2 VP6 video without having to republish a SWF file originally created for use with Flash Player 6 or 7, as long as users use Flash Player 8 or later to view your content. By streaming or downloading On2 VP6 video into Animate SWF versions 6 or 7, and playing the content using Flash Player 8 or later, you avoid having to recreate your SWF files for use with Flash Player 8 and later versions.

Note:

Only Flash Player 8 and 9 support both publish and playback of On2 VP6 video.

Codec	SWF version (publish version)	Flash Player version (required for playback)
Sorenson Spark	6	6, 7, 8
	7	7, 8, 9, 10
On2 VP6	6, 7, 8	8, 9, 10
H.264	9.2 or later	9.2 or later

Tips for creating Adobe FLV and F4V video

Follow these guidelines to deliver the best possible FLV or F4V video:

Work with video in the native format of your project until your final output

If you convert a precompressed digital video format into another format such as FLV or F4V, the previous encoder can introduce video noise. The first compressor already applied its encoding algorithm to the video, reducing its quality, frame size, and rate. That compression may have also introduced digital artifacts or noise. This additional noise affects the final encoding process, and a higher data rate may be required to encode a good-quality file.

Strive for simplicity

Avoid elaborate transitions—they don't compress well and can make your final compressed video look "chunky" during the change. Hard cuts (as opposed to dissolves) are usually best. Eye-catching video sequences—for instance showing an object zooming from behind the first track, doing a "page peel," or wrapping around a ball and then flying off the screen—don't compress well and should be used sparingly.

Know your audience data rate

When you deliver video over the Internet, produce files at lower data rates. Users with fast Internet connections can view the files with little or no delay for loading, but dial-up users must wait for files to download. Make the clips short to keep the download times within acceptable limits for dial-up users.

Select the proper frame rate

Frame rate indicates frames per second (fps). If you have a higher data rate clip, a lower frame rate can improve playback through limited bandwidth. For example, if you are compressing a clip with little motion, cutting the frame rate in half probably saves you only 20% of the data rate. However, if you are compressing high-motion video, reducing the frame rate has a much greater effect on the data rate.

Because video looks much better at native frame rates, leave the frame rate high if your delivery channels and playback platforms allow. For web delivery, get this detail from your hosting service. For mobile devices, use the device-specific encoding presets, and the device emulator available through Adobe Media Encoder in Adobe Premiere Pro. If you need to reduce the frame rate, the best results come from dividing the frame rate by whole numbers.

Select a frame size that fits your data rate and frame aspect ratio

At a given data rate (connection speed), increasing the frame size decreases video quality. When you select the frame size for your encoding settings, consider frame rate, source material, and personal preferences. To prevent pillarboxing, it's important to choose a frame size of the same aspect ratio as that of your source footage. For example, you get pillarboxing if you encode NTSC footage to a PAL frame size.

Adobe Media Encoder makes several Adobe FLV or F4V video presets available. These include preset frame sizes and frame rates for the different television standards at different data rates. Use the following list of common frame sizes (in pixels) as a guide, or experiment with the various Adobe Media Encoder presets to find the best setting for your project.

Dial-up Modem NTSC 4 x 3 162 x 120

Dial-up Modem PAL 4 x 3 160 x 120

T1/DSL/cable NTSC 4 x 3 648 x 480

T1/DSL/cable PAL 4 x 3 768 x 576

Stream for best performance

To eliminate download time, provide deep interactivity and navigation capabilities, or monitor quality of service, stream Adobe FLV or F4V video files with the Adobe Media Server or use the hosted service from one of Adobe's Flash Video Streaming Service partners available through the Adobe website. For more details on the difference between Progressive Download and Streaming with Adobe Media Server, see "Delivering Flash Video: Understanding the Difference Between Progressive Download and Streaming Video" on the Flash Developer Center website.

Know progressive download times

Know how long it will take to download enough of your video so that it can play to the end without pausing to finish downloading. While the first part of your video clip downloads, you may want to display other content that disguises the download. For short clips, use the following formula: Pause = download time – play time + 10% of play time. For example, if your clip is 30 seconds long and it takes one minute to download, give your clip a 33-second buffer (60 seconds – 30 seconds + 3 seconds = 33 seconds).

Remove noise and interlacing

For the best encoding, you might need to remove noise and interlacing.

The higher the quality of the original, the better the final result. Although frame rates and sizes of Internet video are usually smaller than those of television, computer monitors have much better color fidelity, saturation, sharpness, and resolution than conventional televisions. Even with a small window, image quality can be more important for digital video than for standard analog television. Artifacts and noise that are barely noticeable on TV can be obvious on a computer screen.

Adobe Animate is intended for progressive display on computer screens and other devices, rather than on interlaced displays such as TVs. Interlaced footage viewed on a progressive display can exhibit alternating vertical lines in high-motion areas. Thus, Adobe Media Encoder removes interlacing from all video footage that it processes.

Follow the same guidelines for audio

The same considerations apply to audio production as to video production. To achieve good audio compression, begin with clean audio. If you are encoding material from a CD, try to record the file using direct digital transfer instead of through the analog input of your sound card. The sound card introduces an unnecessary digital-to-analog and analog-to-digital conversion that can create noise in your source audio. Direct digital transfer tools are available for Windows and Macintosh platforms. To record from an analog source, use the highest-quality sound card available.

Note:

If your source audio file is monaural (mono), it is recommended that you encode in mono for use with Animate. If you are encoding with Adobe Media Encoder, and using an encoding preset, be sure to check if the preset encodes in stereo or mono, and select mono if necessary.

Tutorials and examples

The following video tutorials and articles provide detailed explanations of creating and preparing video for use in Animate. Some items show CS3 or CS4, but still apply to CS5.

- Video: Creating FLV and F4V files (4:23) (Adobe.com)
- Video: Animate 411 - Video encoding basics (15:16) (Adobe.com)
- Video: Batch encoding with Adobe Media Encoder (5:45) (Adobe.com)
- Article: Using Adobe Media Encoder (Adobe.com)
- Article: H.264 for the rest of us (Adobe.com)

How to add a video in Animate

Animate provides several methods by which you can incorporate video into your Animate document and play it back for users.

Before you begin

Before you start working with video in Animate, it is important to understand the following information:

- Animate can only play specific video formats.

  These include FLV, F4V, and MPEG video. For instructions on converting video in other formats, see Create video for use in Animate.
- Use the separate Adobe Media Encoder application (included with Animate) to convert other video formats to F4V. For instructions, see Create video for use in Animate.
- There are different ways of adding video to Animate, each with advantages in different situations. See below for a list of these methods.
- Animate includes a Video Import Wizard that opens when you choose **File > Import > Import Video**.
- Using the FLVPlayback component is the simplest way to quickly get video playing in a Animate file.

  For instructions, see Progressively download video using a web server.

Methods for using video in Animate

You can use video in Animate in different ways:

- Progressive download from a web server

  This method keeps the video file external to the Animate file and the resulting SWF file. This keeps the SWF file size small. This is the most common method of using video in Animate.

- Stream video using Adobe Media Server.

  This method also keeps the video file external to your Animate file. Adobe Media Streaming Server gives you secure protection of your video content in addition to a smooth streaming playback experience.

- Embed video data directly inside a Animate file

  This method results in very large Animate files, and is only recommended for short video clips. For instructions, see Embed a video file within a Animate file.

Progressively download video using a web server

Progressive downloading lets you use either the FLVPlayback component or ActionScript that you write to load and play back external FLV or F4V files in a SWF file at runtime.

Because the video file is kept external to the other Animate content, it's relatively easy to update video content without republishing the SWF file.

Progressive downloading provides the following advantages over embedding video in the Timeline:

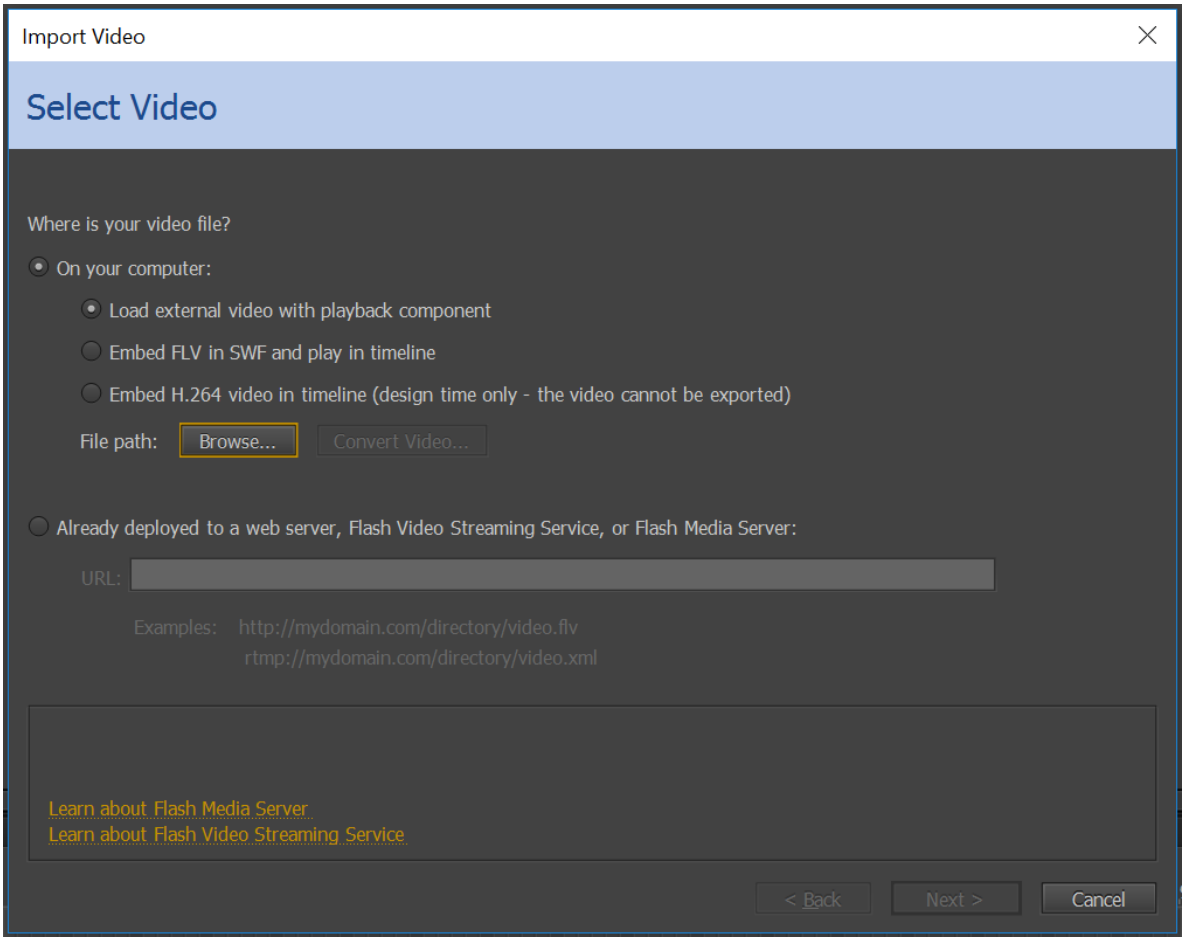
- During authoring, you can publish only your SWF file to preview or test part or all of your Animate content. This results in faster preview times and quicker turnaround on iterative experimentation.
- During playback, video begins playing as soon as the first segment of video is downloaded and cached to the local computer's disk drive.
- At runtime, video files are loaded by Flash Player from the computer's disk drive into the SWF file, with no limitation on video file size or duration. No audio synchronization issues or memory restrictions exist.
- The frame rate of the video file can be different from the frame rate of the SWF file, allowing for greater flexibility in authoring Animate content.

Import video for progressive download

You can import a video file that is stored locally on your computer, and then upload the video file to a server after importing it to your FLA file. In Animate, when you import video for progressive download, you are really adding only a reference to the video file. Animate uses the reference to find the video file on your local computer or on a web server.

You can also import a video file that is already uploaded to a standard web server, an Adobe Media Server (AMS), or Flash Video Streaming Service (FVSS).

1 Select **File** > **Import** > **Import Video** to import the video clip into the current Animate document.


Import Video
Select Video
Where is your video file?
On your computer:
Load external video with playback component
Embed FLV in SWF and play in timeline
Embed H.264 video in timeline (design time only - the video cannot be exported)
File path:
Browse...
Convert Video...
Already deployed to a web server, Flash Video Streaming Service, or Flash Media Server:
URL:
Examples: http://mydomain.com/directory/video.flv
rtmp://mydomain.com/directory/video.xml
Learn about Flash Media Server
Learn about Flash Video Streaming Service
< Back
Next >
Cancel

Select video window

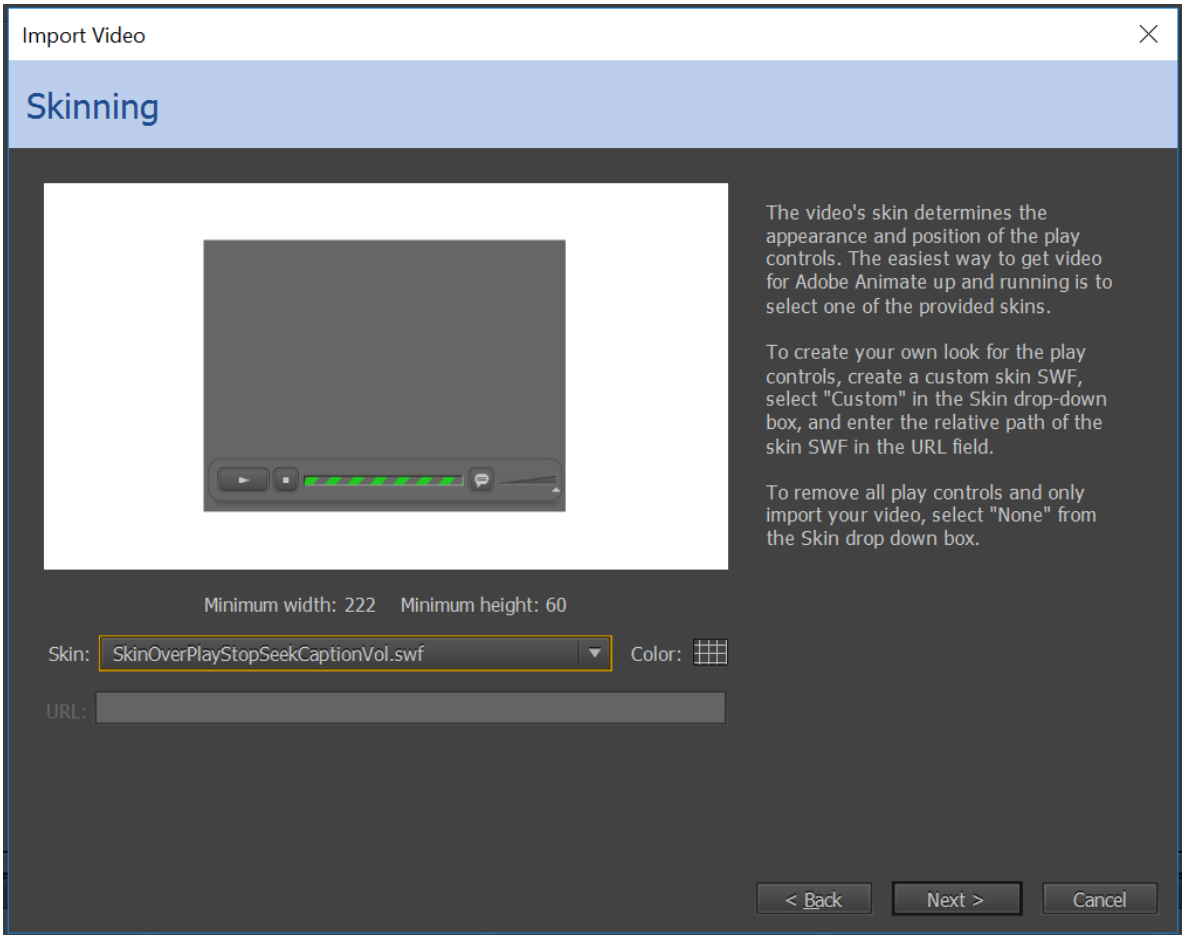
2 Select the video clip to import. You can select either a video clip located on your local computer, or enter the URL of a video already uploaded to a web server or Adobe Media Server.

- To import video located on your local computer, select Load external video with playback component.
- To import video already deployed to a web server, Adobe Media Server, or Flash Video Streaming Service, select Already deployed to a web server, Flash Video Streaming Service, or Stream From Adobe Media Server, and enter the URL of the video clip.

Note:

The URL for a video clip located on a web server will use the http communication protocol. The URL for a video clip located on a Adobe Media Server or Flash Streaming Service will use the RTMP communication protocol.

3 Select a skin for your video clip.


Import Video
Skinning
The video's skin determines the appearance and position of the play controls. The easiest way to get video for Adobe Animate up and running is to select one of the provided skins.
To create your own look for the play controls, create a custom skin SWF, select "Custom" in the Skin drop-down box, and enter the relative path of the skin SWF in the URL field.
To remove all play controls and only import your video, select "None" from the Skin drop down box.
Minimum width: 222 Minimum height: 60
Skin: SkinOverPlayStopSeekCaptionVol.swf
Color:
URL:
< Back
Next >
Cancel

Select the skin for video clip

You can choose to:

- Not use a skin with the FLVPlayback component by selecting **None**.
- Select one of the predefined FLVPlayback component skins. Animate copies the skin into the same folder as the FLA file.

Note:

FLVPlayback component skins are slightly different depending on whether you are creating an AS2- or AS3-based Animate document.

- Select a custom skin of your own design by entering the URL of the skin on the web server.

Note:

If you choose to use a custom skin invoked from a remote location, then live preview will not be available for the video on Stage.

4 The Video Import Wizard creates an FLVPlayback video component on the Stage that you can use to test video playback locally. When you finish creating your Animate document and want to deploy the SWF file and video clip, upload the following assets to the web server or Adobe Media Server hosting your video:

- If you are using a local copy of the video clip, upload the video clip (which is located in the same folder as the source video clip you selected with a .flv extension).

Note:

Animate uses a relative path to point to the FLV or F4V file (relative to the SWF file), letting you use the same directory structure locally that you use on the server. If the video was previously deployed to your FMS or the FVSS hosting your video, you can skip this step.

- The video skin (if you chose to use a skin)

  To use a predefined skin, Animate copies the skin into the same folder as the FLA file.

- The FLVPlayback component

  To edit the FLVPlayback component's URL field to that of the web server or Adobe Media Server that you are uploading the video to, use the Component inspector (Windows > Component inspector) to edit the contentPath parameter.

Stream video using Adobe Media Server

Adobe Media Server streams media in real-time to Flash Player and AIR. Adobe Media Server uses bandwidth detection to deliver video or audio content based on the user's available bandwidth.

Streaming video with Adobe Media Server provides the following advantages over embedded and progressively downloaded video:

- Video playback starts sooner than it does using other methods of incorporating video.
- Streaming uses less of the client's memory and disk space, because the clients don't need to download the entire file.
- Network resources are used more efficiently, because only the parts of the video that are viewed are sent to the client.
- Delivery of media is more secure, because media is not saved to the client's cache when streamed.
- Streaming video provides better tracking, reporting, and logging ability.
- Streaming lets you deliver live video and audio presentations, or capture video from a web cam or digital video camera.
- Adobe Media Server enables multiway and multiuser streaming for video chat, video messaging, and video conferencing applications.
- By using server-side scripting to control video and audio streams, you can create server-side play lists, synchronized streams, and more intelligent delivery options based on the client's connection speed.

To learn more about Adobe Media Server, see www.adobe.com/go/flash_media_server.

To learn more about Flash Video Streaming Service, see www.adobe.com/go/learn_fvss_en.

Embed a video file within a Animate file

When you embed a video file, all of the video file data is added to the Animate file. This results in a much larger Animate file and subsequent SWF file. The video is placed in the Timeline where you can see the individual video frames represented in the Timeline frames. Because each video frame is represented by a frame in the Timeline, the frame rate of the video clip and the SWF file must be set to the same rate. If you use different frame rates for the SWF file and the embedded video clip, video playback is inconsistent.

Note: To use variable frame rates, stream the video using either progressive downloading or Adobe Media Server. When you import video files using either of these methods, the FLV or F4V files are self-contained and run at a frame rate separate from that of all other timeline frame rates included in the SWF file.

Embedded video works best for smaller video clips, with a playback time of less than 10 seconds. If you are using video clips with longer playback times, consider using progressively downloaded video, or streaming video using Adobe Media Server.

The limitations of embedded video include:

- You might encounter problems if the resulting SWF files become excessively large. Flash Player reserves a lot of memory when downloading and attempting to play large SWF files with embedded video, which can cause Flash Player to fail.
- Longer video files (over 10 seconds long) often have synchronization issues between the video and audio portions of a video clip. Over time, the audio track begins playing out of sequence with the video, causing a less than desirable viewing experience.
- To play a video embedded in a SWF file, the entire video file must be downloaded before the video starts to play. If you embed an excessively large video file, it might take a long time for the SWF file to download in its entirety and for playback to start.
- After a video clip is imported, it cannot be edited. Instead, you must re-edit and re-import the video file.
- When publishing your SWF file via the web, the entire video must be downloaded to the viewer's computer before video playback can begin.
- At runtime, the entire video must fit into the local memory of the playback computer.
- The length of an imported video file cannot exceed 16000 frames.
- The video frame rate and Animate Timeline frame rate must be the same. Set the frame rate of your Animate file to match the frame rate of the embedded video.

You can preview frames of an embedded video by dragging the playhead along the Timeline (scrubbing). Note that the video sound track does not play back during scrubbing. To preview the video with sound, use the Test Movie command.

Embedding a video within a Animate file

1. Select File > Import > Import Video to import the video clip into the current Animate document.
2. Select one of the following options:

   Load external video with playback component: Imports the video and creates an instance of the FLVPlayback component to control video playback.

   Embed FLV in SWF and play in timeline: Embeds the FLV into the Animate document and places it in the timeline.

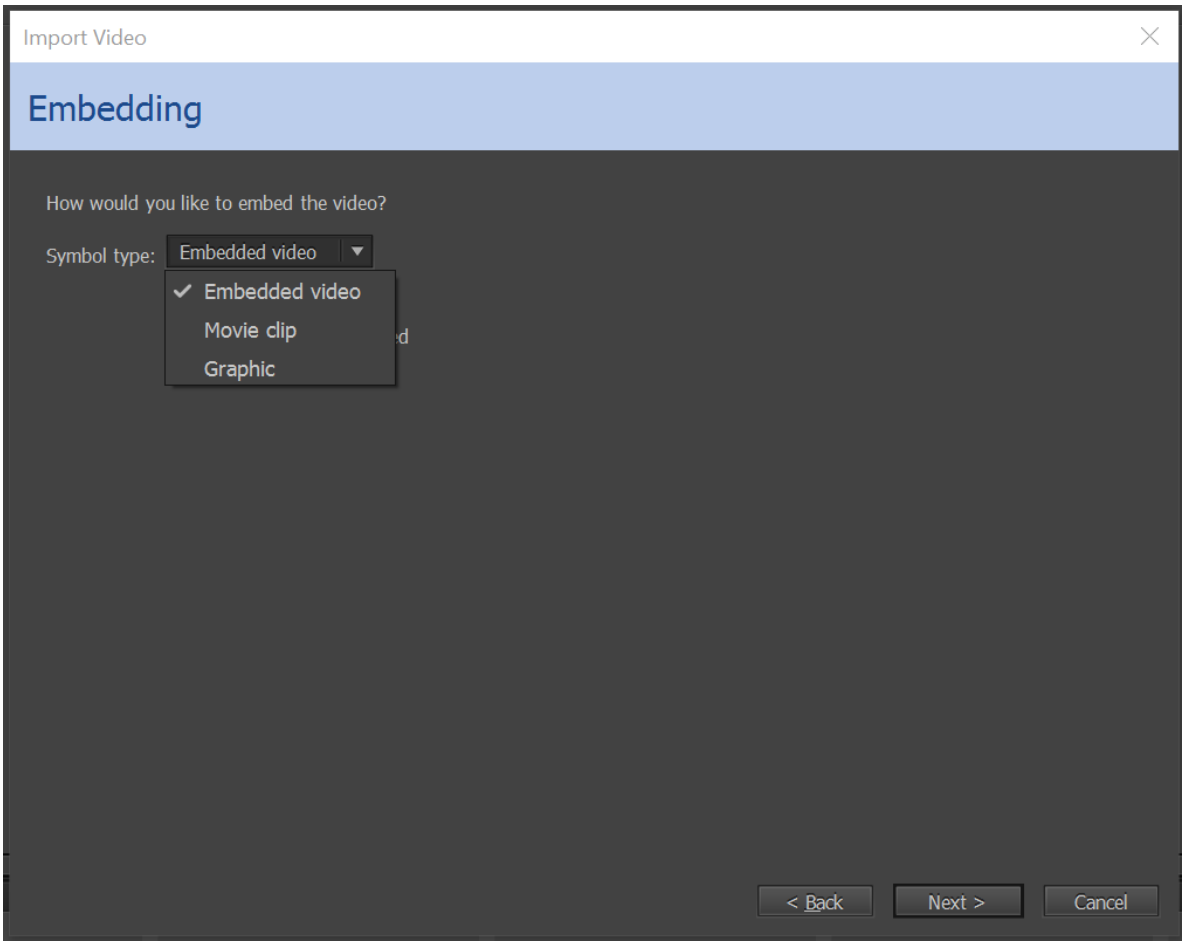
   Embed H.264 videos in timeline: Embeds H.264 videos into the Animate document. When you import a video using this option, it is placed on the stage to be used as a guide for your animation at design time. Frames from the video are rendered on the stage as you scrub through or play the timeline. The audio for the relevant frames is also played back.

   Note:

   - When you try to publish your FLA file with H264 video content on a layer that is neither a guide layer nor a hidden layer, a warning is shown if the platform you are publishing to does not support embedded H.264 videos..
3. Click Browse and select the video file from your computer and click Next.

Optional: If you have Adobe Media Encoder installed on your computer and you want to convert the video to another format using AME, click Convert video.

4 Choose the symbol type with which to embed the video.



Choose the symbol type

Embedded Video If you're using the video clip for linear playback in the Timeline, importing the video into the Timeline is the most appropriate method.

Movie Clip A best practice is to place video inside a movie clip instance, because you have the most control over the content. The video's Timeline plays independently from the main Timeline. You do not have to extend your main Timeline by many frames to accommodate the video, which can make working with your FLA file difficult.

Graphic When you embed a video clip as a graphic symbol, you cannot interact with the video using ActionScript (typically you use graphic symbols for static images and to create reusable pieces of animation that are tied to the main Timeline).

5 Import the video clip directly onto the Stage (and the Timeline) or as a library item.

By default, Animate places the video you import on the Stage. To import into the library only, deselect Place Instance on Stage.

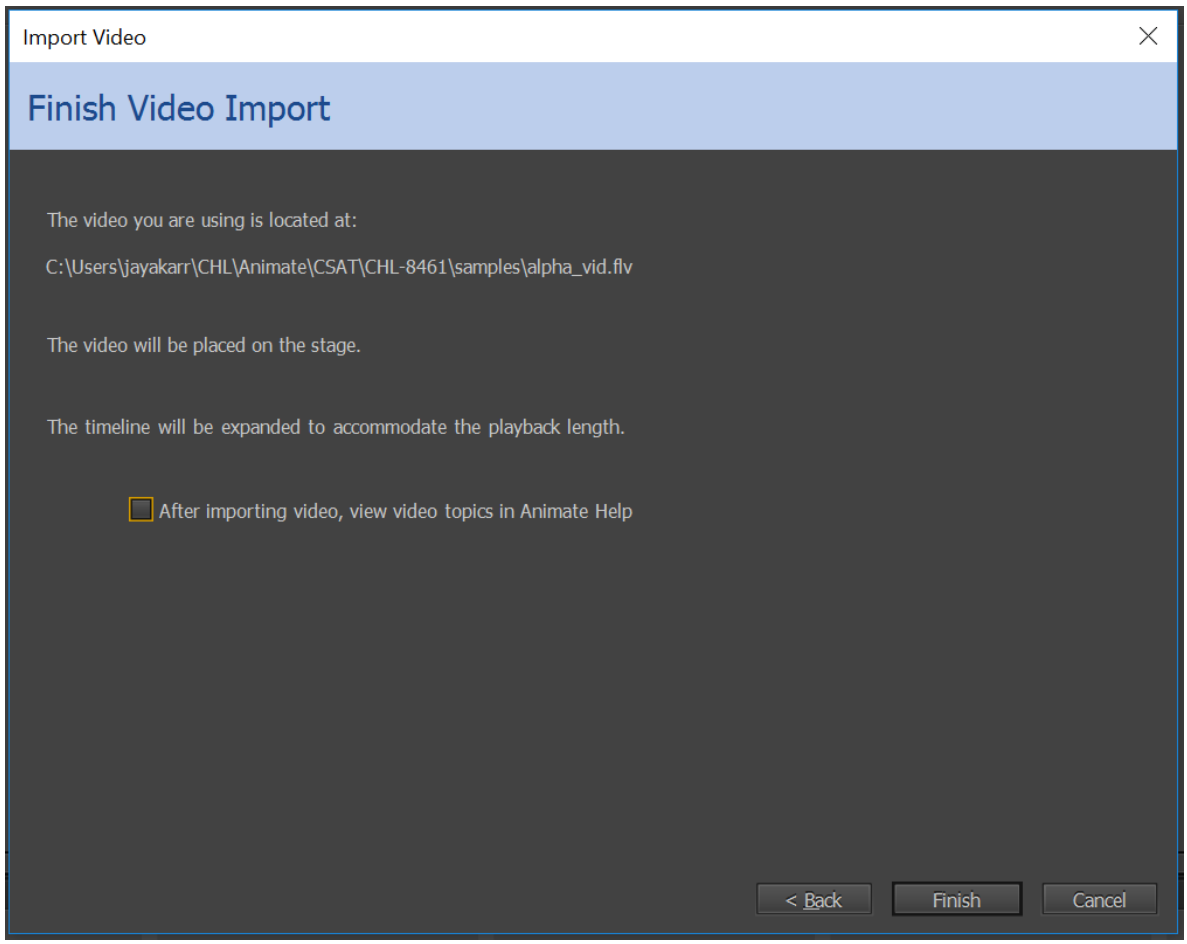
If you're creating a simple video presentation with linear narration and little to no interaction, accept the default setting and import the video to the Stage. To create a more dynamic presentation, work with multiple video clips, or add dynamic transitions or other elements using ActionScript, import the video into the library. After a video clip is in the library, customize it by converting it into a MovieClip object that you can more easily control with ActionScript.

By default, Animate expands the Timeline to accommodate the playback length of the video clip you are embedding.

If the video file contains audio that you don't want to import, deselect Include audio.

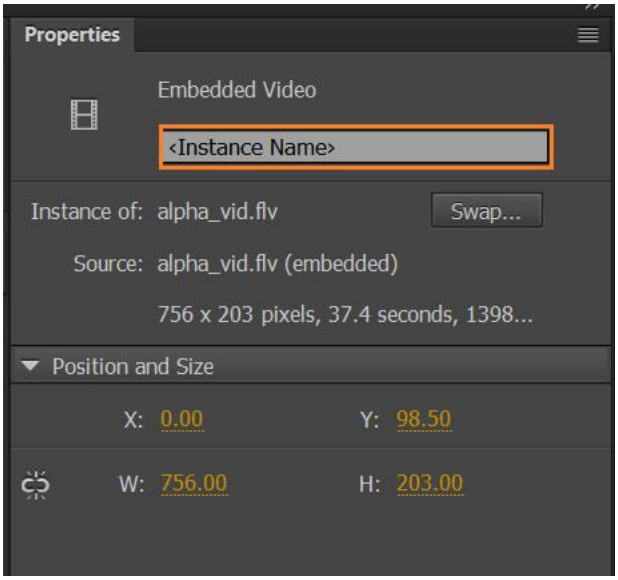
6 Click **Next**. Review the confirmation messages and click **Finish**.

The Video Import wizard embeds the video into the SWF file. The video appears either on the Stage or in the library depending on the embedding options you chose.


Import Video
Finish Video Import
The video you are using is located at:
C:\Users\jayakarr\CHL\Animate\CSAT\CHL-8461\samples\alpha_vid.flv
The video will be placed on the stage.
The timeline will be expanded to accommodate the playback length.
After importing video, view video topics in Animate Help
< Back
Finish
Cancel

Finish video import dialog

7 In the Property inspector (**Window > Properties**), give the video clip an instance name, and make any modifications to the video clip's properties.



Video clip instance name

Import video files into the library

To import FLV, F4V, or H.264 videos, use the **Import** > **Import Video** or **Import to Library** commands.

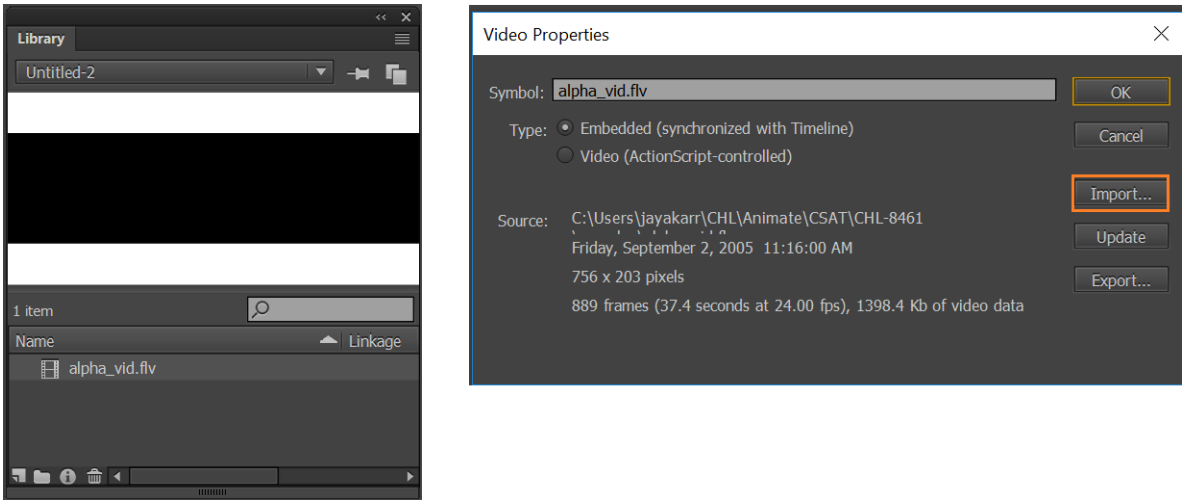
To create your own video player, which dynamically loads FLV or F4V files from an external source, place your video inside a movie clip symbol. When you load FLV or F4V files dynamically, adjust the dimensions of the movie clip to match the actual dimension of the video file and scale the video by scaling the movie clip.

Note:

A best practice is to place video inside a movie clip instance, which gives you the most control over the content. The video's Timeline plays independently from the main Timeline. You do not have to extend your main Timeline by many frames to accommodate the video, which can make working with your FLA file difficult.

? To import an FLV, SWF, or H.264 video file into the library, do one of the following:

- Select **File** > **Import** > **Import To Library**.
- Select any existing video clip in the Library Panel, and select Properties from the Library Panel menu. You can also rght-click on the video file and choose Properties in the pop-up menu. Click **Import**. Locate the file to import, and click **Open**.



Import to library option

Change the properties of a video clip

You can change properties for an instance of an embedded video clip on the Stage, assign the instance an instance name, and change its width, height, and position on the Stage using the Property inspector. You can also swap an instance of a video clip—assign a different symbol to an instance of a video clip. Assigning a different symbol to an instance displays a different instance on the Stage but leaves all the other instance properties (such as dimensions and registration point) intact.

In the Video Properties dialog box, you can do the following:

- View information about an imported video clip, including its name, path, creation date, pixel dimensions, length, and file size
- Change the video clip name
- Update the video clip if you modify it in an external editor
- Import an FLV or F4V file to replace the selected clip
- Export a video clip as an FLV or F4V file

Change video instance properties in the Property inspector

1. Select an instance of an embedded or linked video clip on the Stage.
2. Select **Window > Properties**, and do any of the following:
   - Enter an instance name in the Name text field on the left side of the Property inspector.
   - Enter values for W and H to change the dimensions of the video instance.
   - Enter values for X and Y to change the position of the upper-left corner of the instance on the Stage.
   - Click Swap. Select a video clip to replace the clip currently assigned to the instance.

     ***note**: You can swap an embedded video clip only with another embedded video clip, and you can swap a linked video clip only with another linked video clip.*

View video clip properties in the Video Properties dialog box

1. Select a video clip in the Library Panel.

2 Select Properties from the Library Panel menu, or click the Properties button located at the bottom of the Library Panel. The Video Properties dialog box is displayed.

Assign a new name to, update, or replace a video

1 Select the video clip in the Library Panel and select Properties from the Library Panel menu.

2 Do one of the following:

- To assign a new name, enter the name in the Name text field.
- To update a video, navigate to the updated video file and click Open.
- To replace a video, click Import, navigate to the FLV, F4V, or H.264 file to replace the current clip, and click Open.

Control video playback using the Timeline

To control playback of an embedded video file, control the Timeline that contains the video. For example, to pause a video playing on the main Timeline, you would call a *stop()* action that targets that Timeline. Similarly, you can control a video object in a movie clip symbol by controlling the playback of that symbol's Timeline.

You can apply the following actions to imported video objects in movie clips: *goTo*, *play*, *stop*, *toggleHighQuality*, *stopAllSounds*, *getURL,FScommand*, *loadMovie*, *unloadMovie*, *ifFrameLoaded*, and *onMouseEvent*. To apply actions to a Video object, first convert the Video object to a movie clip.

To show a live video stream from a camera, use ActionScript. First, place a Video object on the Stage, select New Video from the Library Panel menu. To attach the video stream to the Video object, use *Video.attachVideo*.

See also Video and attachVideo (Video.attachVideo method) in the *ActionScript 2.0 Language Reference*, and fl.video in the *ActionScript 3.0 Language Reference*.

Update an embedded video after editing its source file

1 Select the video clip in the Library Panel.

2 Select **Properties** and click **Update**.

The embedded video clip is updated with the edited file. The compression settings you selected when you first imported the video are reapplied to the updated clip.

Working with video cue points

Note: (Animate CC only) Video Cue Points feature is deprecated and will be unavailable with Animate CC

Use video cue points to allow events to be triggered at specific times in the video. There are two kinds of cue points that you can work with in Flash:

- Encoded cue points. These are cue points you add when encoding video with Adobe Media Encoder. For more information about adding cue points in Adobe Media Encoder, see Using Adobe Media Encoder. Encoded cue points can be accessed by other applications in addition to Animate.
- ActionScript cue points. These are cue points you add to a video with the Property inspector in Animate. ActionScript cue points are accessible only to Animate and Flash Player. For more information about ActionScript cue points, see Understanding Cue Points in the ActionScript 3.0 Developer's Guide.

When an FLVPlayback component instance is selected on the Stage, the video cue points list appears in the Property inspector. You can also preview the entire video on the Stage and add ActionScript cue points using the Property inspector while previewing the video, including videos served by Adobe Media Server.

To work with cue points in the Property inspector:

1. Import video as progressive download, or place the FLVPlayback component on the stage and specify the source video. You can specify the source video in the Property inspector.
2. In the Property inspector, click Cue Points to expand the section, if it's not already open.
3. Click the Add button (+) to add an ActionScript cue point, and the Delete button (-) to delete an existing cue point. You can specify the time by dragging the mouse right or left to increase or decrease the timecode value, or by typing in a value.
4. To add a parameter to a cue point, select the ActionScript cue point and click the Add button (+) at the bottom of Parameters section.
5. You can rename the ActionScript cue points and any parameters by clicking in the name field and editing the name.

You can import and export lists of cue point from within the Property inspector. Only ActionScript cue points can be imported to avoid conflicts with cue points that have already been embedded inside the video during encoding.

The Import and Export cue point buttons at the top of Cue Points section allow you to import or export cue point lists in XML format. When exporting, the list includes all Navigation and Event cue points which are embedded in the video, along with all ActionScript cue points you have added. When importing, a dialog showing the number of ActionScript cue points imported is displayed.

Draw and create objects with Animate CC

About drawing

The drawing tools in Adobe Animate CC let you create and modify lines and shapes for the artwork in your documents. The lines and shapes you create in Animate are all lightweight vector graphics, which help keep your FLA file size small.

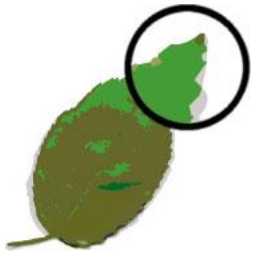
Before you draw and paint in Animate, it is important to understand how Animate creates artwork, and how drawing, painting, and modifying shapes can affect other shapes on the same layer.

Vector and bitmap graphics

Computers display graphics in either vector or bitmap format. Understanding the difference between the two formats helps you work more efficiently. Using Animate, you can create and animate compact vector graphics. Animate also imports and manipulates vector and bitmap graphics that were created in other applications.

Vector graphics

Vector graphics describe images by using lines and curves, called *vectors,* that also include color and position properties. For example, the image of a leaf is described by points through which lines pass, creating the leaf's outline. The color of the leaf is determined by the color of the outline and the color of the area enclosed by the outline.

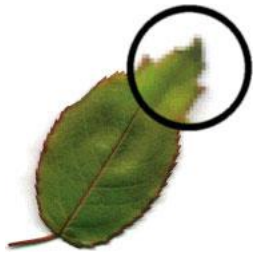


Lines in vector art.

When you edit a vector graphic, you modify the properties of the lines and curves that describe its shape. Move, resize, reshape, and change the color of a vector graphic without changing the quality of its appearance. Vector graphics are resolution independent; that is, they can be displayed on output devices of varying resolutions without losing any quality.

Bitmap graphics

Bitmap graphics describe images using colored dots, called *pixels,* arranged in a grid. For example, the image of a leaf is described by the specific location and color value of each pixel in the grid, creating an image in much the same manner as a mosaic.



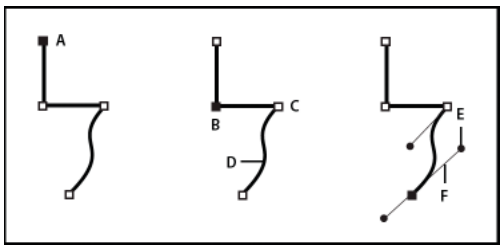
Pixels in bitmap art.

When you edit a bitmap graphic, you modify pixels rather than lines and curves. Bitmap graphics are resolution dependent, because the data describing the image is fixed to a grid of a particular size. Editing a bitmap graphic can change the quality of its appearance. In particular, resizing a bitmap graphic can make the edges of the image ragged as pixels are redistributed within the grid. Displaying a bitmap graphic on an output device that has a lower resolution than the image itself also degrades its quality.

Paths

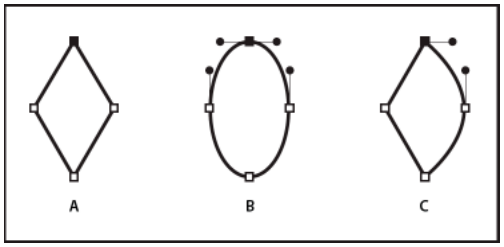
Whenever you draw a line or shape in Animate, you create a line called a path. A path is made up of one or more straight or curved segments. The beginning and end of each segment is denoted by anchor points, which work like pins holding a wire in place. A path can be closed (for example, a circle), or open, with distinct endpoints (for example, a wavy line).

You change the shape of a path by dragging its anchor points, the direction points at the end of direction lines that appear at anchor points, or the path segment itself.



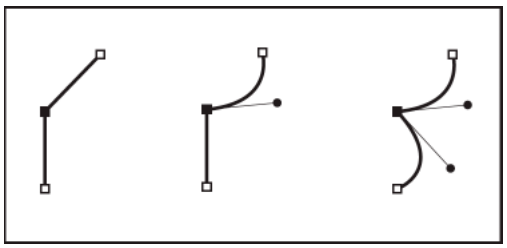
Components of a path
***A** Selected (solid) endpoint **B** Selected anchor point **C** Unselected anchor point **D** Curved path segment **E** Direction point **F** Direction line.*

Paths can have two kinds of anchor points: corner points and smooth points. At a *corner point*, a path abruptly changes direction. At a *smooth point*, path segments are connected as a continuous curve. You can draw a path using any combination of corner and smooth points. If you draw the wrong type of point, you can always change it.



Points on a path
***A** Four corner points **B** Four smooth points **C** Combination of corner and smooth points.*

A corner point can connect any two straight or curved segments, while a smooth point always connects two curved segments.



A corner point can connect both straight segments and curved segments.

Note:

Don't confuse corner and smooth points with straight and curved segments.

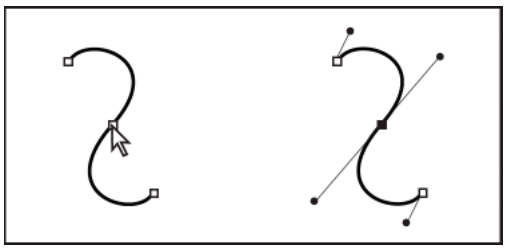
A path outline is called a *stroke*. A color or gradient applied to an open or closed path interior area is called a *fill*. A stroke can have weight (thickness), color, and a dash pattern. After you create a path or shape, you can change the characteristics of its stroke and fill.

Direction lines and direction points

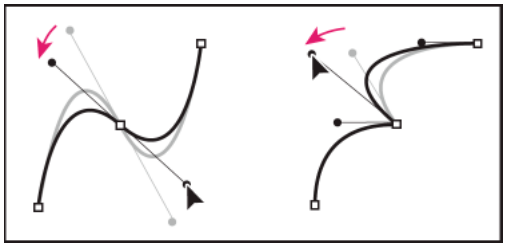
When you select an anchor point that connects curved segments (or select the segment itself), the anchor points of the connecting segments display *direction handles*, which consist of *direction lines* that end in *direction points.* The angle and length of the direction lines determine the shape and size of the curved segments. Moving the direction points reshapes the curves. Direction lines don't appear in the final output.

A smooth point always has two direction lines, which move together as a single, straight unit. When you move a direction line on a smooth point, the curved segments on both sides of the point are adjusted simultaneously, maintaining a continuous curve at that anchor point.

In comparison, a corner point can have two, one, or no direction lines, depending on whether it joins two, one, or no curved segments, respectively. Corner point direction lines maintain the corner by using different angles. When you move a direction line on a corner point, only the curve on the same side of the point as that direction line is adjusted.

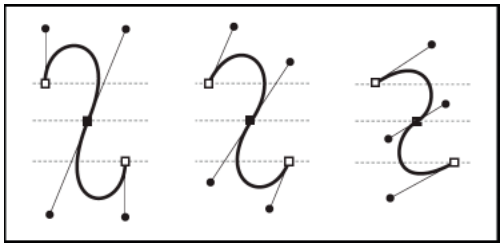


After selecting an anchor point (left), direction lines appear on any curved segments connected by the anchor point (right).



Adjusting direction lines on a smooth point (left) and a corner point (right).

Direction lines are always tangent to (perpendicular to the radius of) the curve at the anchor points. The angle of each direction line determines the slope of the curve, and the length of each direction line determines the height, or depth, of the curve.



Moving and resizing direction lines changes the slope of curves.

Drawing modes and graphic objects

In Animate, you can create several different kinds of graphic objects by using different drawing modes and drawing tools. Each kind has its own advantages and disadvantages. By understanding the capabilities of the different graphic object types, you can make good decisions about which types of objects to use in your work.

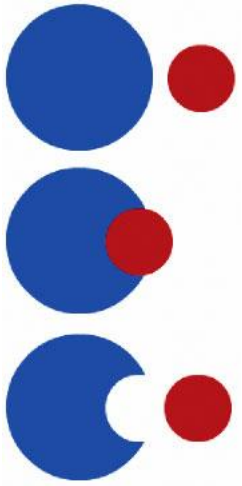
Note:

In Animate, graphic objects are items on the Stage. Animate lets you move, copy, delete, transform, stack, align, and group graphic objects. "Graphic objects" in Animate are different from "ActionScript objects," which are part of the ActionScript® programming language. Do not confuse the two uses of the term "objects." For more information on objects in the programming language, see About Data Types in Learning ActionScript 2.0 in Adobe Animate, or Data types in the ActionScript 3.0 Developer's Guide.

Merge Drawing mode

The default drawing mode automatically merges shapes that you draw when you overlap them. When you draw shapes that overlap each other in the same layer, the top-most shape cuts away the part of the shape underneath it that it overlaps. In this way, drawing shapes is a destructive drawing mode. For example, if you draw a circle and overlay a smaller circle on top of it, and then select the smaller circle and move it, the portion of the second circle that overlaid the first circle is removed.

When a shape has both a stroke and a fill, they are considered separate graphic elements that can be selected and moved independently.



Shapes created with the Merge Drawing mode merge together when they overlap. Selecting a shape and moving it results in the overlaid shape being altered.

Enter Merge Drawing mode

1. Select the Merge Drawing option in the Tools panel.
2. Select a drawing tool from the Tools panel and draw on the Stage

Note:

By default, Animate uses the Merge Drawing mode.

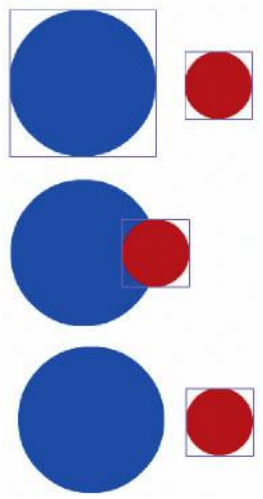
Object Drawing mode

Creates shapes referred to as drawing objects. Drawing objects are separate graphic objects that do not automatically merge together when overlaid. This lets you overlap shapes without altering their appearance if you move them apart, or rearrange their appearance. Animate creates each shape as a separate object that you can individually manipulate.

When a drawing tool is in Object Drawing mode, the shapes you create with it are self-contained. The stroke and fill of a shape are not separate elements, and shapes that overlap do not alter one another. When you select a shape created using Object Drawing mode, Animate surrounds the shape with a rectangular bounding box to identify it.

Note:

Set preferences for contact sensitivity when selecting shapes created using the Object Drawing mode.



Shapes created with the Object Drawing mode remain separate objects that you can manipulate individually.

Enter Object Drawing mode

To draw shapes using Object Drawing mode, you must explicitly enable it.

1. Select a drawing tool that supports Object Drawing mode (the Pencil, Line, Pen, Brush, Oval, Rectangle, and Polygon tools).
2. Select the Object Drawing button from the Options category of the Tools panel, or press the J key to toggle between the Merge and Object Drawing modes. The Object Drawing button toggles between the Merge and Object Drawing modes. You can set preferences for contact sensitivity when you select shapes created with Object Drawing mode.
3. Draw on the Stage.

Convert a Merge Drawing mode created shape to an Object Drawing mode shape

1. Select the shape on the Stage.
2. To convert the shape into an Object Drawing mode shape, select Modify > Combine Objects > Union. After conversion, the shape is treated like a vector-based drawing object that does not alter its appearance by interacting with other shapes.

Note:

To join two or more shapes into a single, object-based shape, use the Union command.

Primitive objects

Primitive objects are shapes that let you adjust their characteristics in the Property inspector. You can precisely control the size, corner radius, and other properties of the shape at any time after you have created it without having to draw it from scratch.

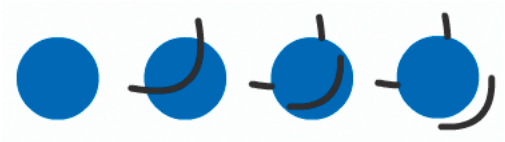
Two types of primitives are available, rectangles and ovals.

1. Select the Rectangle Primitive Tool or Oval Primitive Tool from the Tools panel.

2 Draw on the Stage.

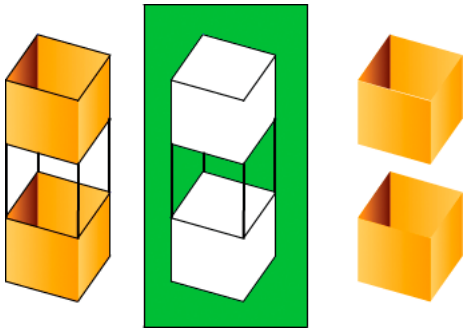
Overlapping shapes

When you draw a line across another line or painted shape in Merge Drawing mode, the overlapping lines are divided into segments at the intersection points. To select, move, and reshape each segment individually, use the Selection tool.



A fill; the fill with a line drawn through it; and the three line segments created by segmentation.

When you paint on top of shapes and lines, the portion underneath is replaced by whatever is on top. Paint of the same color merges together. Paint of different colors remains distinct. To create masks, cutouts, and other negative images, use these features. For example, the following cutout is made by moving the ungrouped kite image onto the green shape, deselecting the kite, and then moving the filled portions of the kite away from the green shape.



Making a cutout with the kite image.

To avoid inadvertently altering shapes and lines by overlapping them, group the shapes or use layers to separate them.

Color Panels in Animate CC

Color models describe the colors we see and work with in digital graphics. Each color model, such as RGB, HSB, or CMYK, represents a different method for describing and classifying color. Color models use numeric values to represent the visible spectrum of color. A color space is a variant of a color model and has a specific gamut (range) of colors. For example, within the RGB color model are a number of color spaces: Adobe® RGB, sRGB, and Apple® RGB. While each of these color spaces defines color using the same three axes (R, G, and B), their gamuts are different.

When you work with the colors in a graphic, you are actually adjusting numerical values in the file. It's easy to think of a number as a color, but these numerical values are not absolute colors in themselves—they only have a color meaning within the color space of the device that is producing the color.

Because each device has its own color space, it can reproduce colors only in its gamut. When an image moves from one device to another, image colors may change because each device interprets the RGB or HSB values according to its own color space. For example, it is impossible for all the colors viewed on a monitor to be identically matched in a print from a desktop printer. A printer operates in a CMYK color space and a monitor operates in an RGB color space. Their gamuts are different. Some colors produced by inks cannot be displayed on a monitor, and some colors that can be displayed on a monitor cannot be reproduced using inks on paper.

When creating colors for use in Animate documents, keep in mind that even though it is impossible to perfectly match all colors on different devices, you can achieve good results by considering the graphic display capabilities of the devices in use by your target audience.

Adobe Animate CC lets you apply, create, and modify colors using the RGB or HSB color models. Using the default palette or a palette you create, you can choose colors to apply to the stroke or fill of an object you are about to create, or an object already on the Stage.

When applying a stroke color to a shape, you can do any of the following:

- Apply a solid color, gradient, or bitmap to a shape's fill. To apply a bitmap fill to a shape, you must import a bitmap into the current file. Select any solid color, gradient, and the style and weight of the stroke.
- Create an outlined shape with no fill by using No Color as a fill.
- Create a filled shape with no outline by using No Color as an outline.
- Apply a solid color fill to text.

With the Color panel, you can create and edit solid colors and gradient fills in RGB and HSB modes.

To access the system color picker, select the Color Picker icon from the Stroke Color or Fill Color control in the Color panel, the Tools panel or Shape Property inspector.

The Color panel

The Color panel lets you modify the color palette of a FLA and change the color of strokes and fills, including the following:

- Import, export, delete, and otherwise modify the color palette for a FLA file by using the Swatches panel.
- Select colors in hexadecimal mode.
- Create multicolor gradients.
- Use gradients to produce a wide range of effects, such as giving an illusion of depth to a two-dimensional object.

The Color panel contains the following controls:

Stroke Color Changes the color of the stroke, or the border, of a graphic object.

Fill Color Changes the color of the fill. The fill is the area of color that fills up the shape.

Color Type menu Changes the fill style:

None Removes the fill.

Solid Color Provides a solid, single fill color.

Linear Gradient Produces a gradient that blends on a linear path.

Radial Gradient Produces a gradient that blends outward in a circular path from a central focal point.

Bitmap Fill Tiles the selected fill area with a bitmap image that you can select. When you choose Bitmap, a dialog box lets you select a bitmap image on your local computer, and add it to the library. You can apply this bitmap as a fill; the appearance is similar to a mosaic tile pattern with the image repeated within the shape.

HSB Lets you change the Hue, Saturation, and Brightness of the colors in a fill.

RGB Lets you change the density of the red, green, and blue (RGB) colors in a fill.

Alpha Sets the opacity for a solid fill, or the currently selected slider for a gradient fill. An alpha value of 0% creates an invisible (or transparent) fill; an alpha value of 100% creates an opaque fill.

Current Color Swatch Displays the currently selected color. If you select a gradient fill type (Linear or Radial) from the fill Type menu, the Current Color Swatch displays the color transitions within the gradient you create.

System Color Picker Lets you select a color visually. Click System Color Picker and drag the cross-hair pointer until you find the color you want.

Hexadecimal value Displays the current color's hexadecimal value. To change the color using the hexadecimal value, type in a new value. Hexadecimal color values (also called hex values) are 6-digit alphanumeric combinations that represent a color.

Flow Lets you control colors applied past the limits of a linear or radial gradient.

Extend Color (Default) Applies the colors you specify past the end of the gradient.

Reflect Color Causes the gradient colors to fill the shape using a reflective mirroring effect. The gradients you specify are repeated in a pattern from the beginning of the gradient to the end, and then repeated in the opposite sequence from the end of the gradient to the beginning, and then back to the beginning of the gradient to the end until the selected shape is filled.

Repeat Color Repeats the gradient from the beginning of the gradient to the end until the selected shape is filled.

***note**: Overflow modes are supported only in Adobe Flash Player 8 and later.*

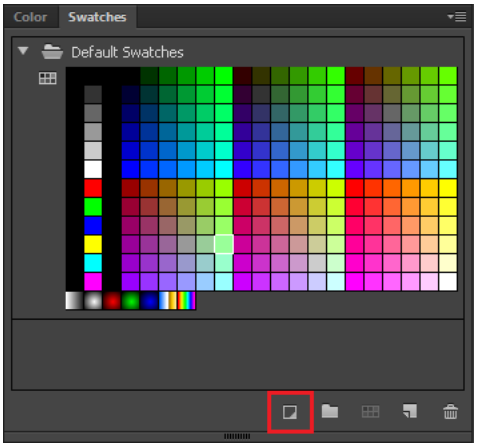
Linear RGB Creates a SVG-compliant (Scalable Vector Graphics) linear or radial gradient.

Swatches panel

Swatches enable easy reuse and update of colors across documents. You can now create tagged swatches by selecting a color from your swatches. Once you create a tagged swatch and apply it to shapes and paths in your Animate content, changing the color in the tagged swatch will automatically update all the content that is using it.

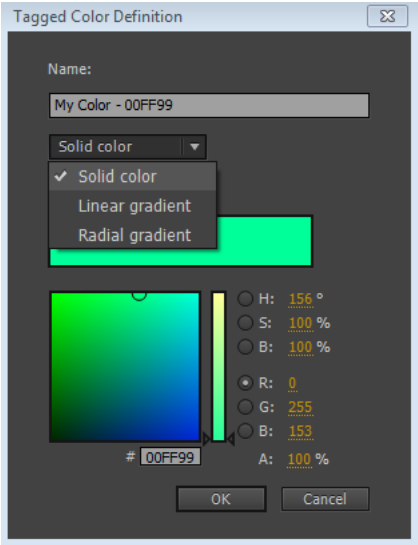
1 Click **Window** > **Color**.

2 On the **Swatches** tab of the **Colors** panel, select the color that you want to convert to a tagged swatch and click the **Convert to Tagged Swatch** button on the bottom part of the panel.



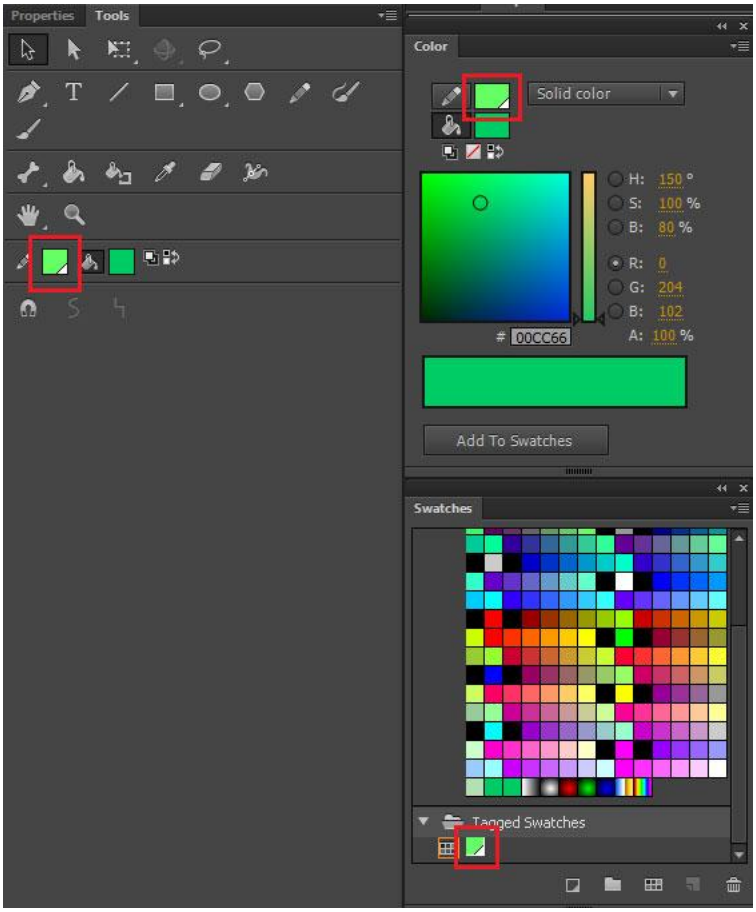
3 On the **Tagged Color Definition** dialog box, specify the following:

- A name for the new swatch.
- Choice of solid color, linear gradient, or radial gradient.
- A Color by specifying either the HSB values (Hue, Saturation and Brightness) or RGB (Red, Green, and Blue)



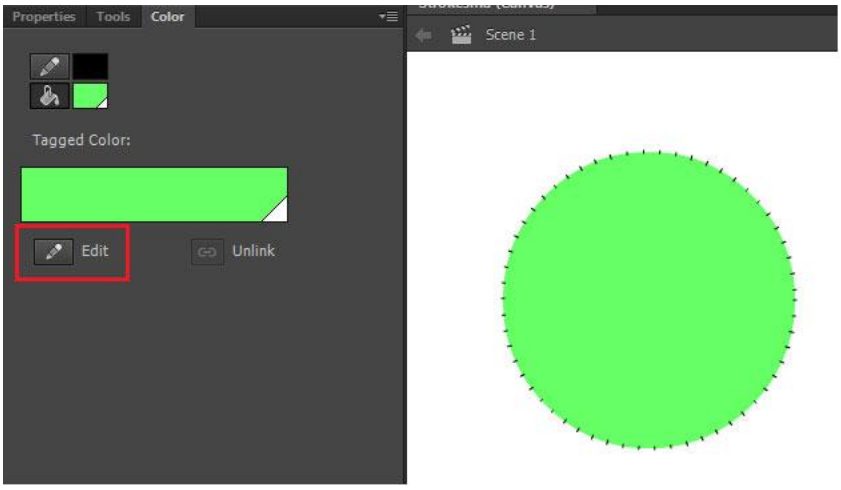
Tagged color definition dialog box

The new tagged swatch appears in both the **Colors** and **Swatches** tabs of the **Colors** panel and in the **Tools** panel.



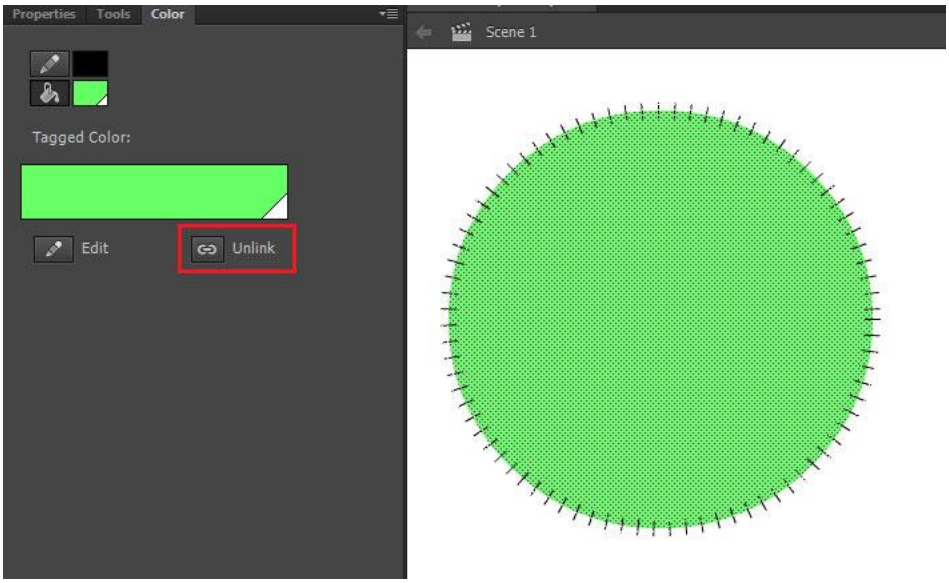
The newly created tagged swatch in color, swatch, and tools panels

4 When you open the Color panel after selecting the object that uses the tagged swatch, you will see options to edit the color properties. If you make changes to the color properties, the changes are automatically reflected on all the elements on stage that use the tagged swatch.

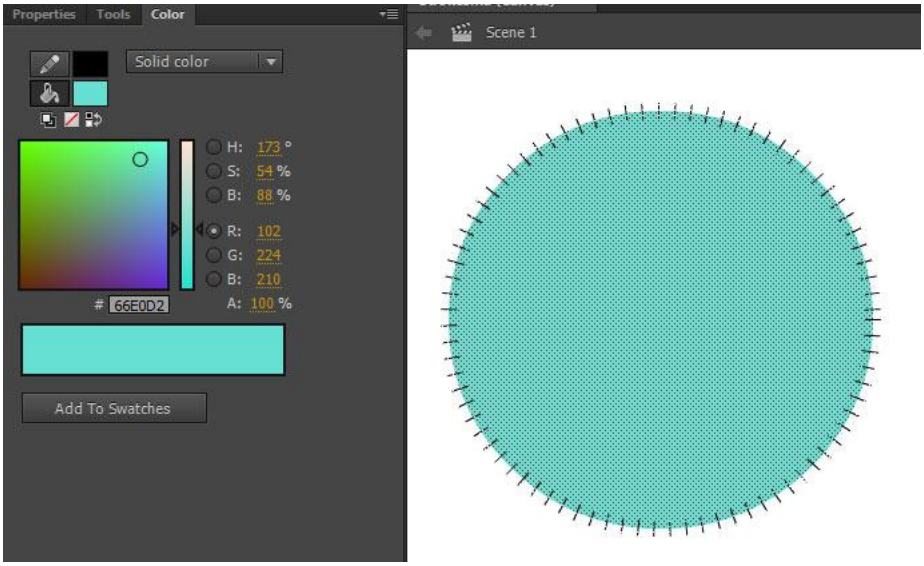


5 You can double-click on a swatch or select a swatch and click **Edit** to open the **Tagged Color Definition** dialog box and make changes to the color in the swatch.

6 To unlink a shape that uses a swatch from the swatch color, select the shape and then click the **Unlink** button. You can select a new color from the colors panel for the shape.



Unlink option



Select a different color for the shape from the color panel

Video

Color palettes

Each Animate CC file contains its own color palette, stored in the Animate document. Animate CC displays a file's palette as swatches in the Fill Color and Stroke Color controls and in the Swatches panel. The default color palette is the web-safe palette of 216 colors. To add colors to the current color palette, use the Color panel.You can import and export both solid and gradient color palettes between Animate files, as well as between Animate CC and other applications.

The default palette and the web-safe palette

Save the current palette as the default palette, replace the current palette with the default palette defined for the file, or load the web-safe palette to replace the current palette.

- To load or save the default palette, in the Swatches panel, select one of the following commands from the menu in the upper-right corner:

  Load Default Colors: Replaces the current palette with the default palette..

  Save As Default: Saves the current color palette as the default palette. The new default palette is used when you create new files.

- To load the web-safe 216-color palette, in the Swatches panel, select Web 216 from the menu in the upper-right corner.

? In the Swatches panel, select Sort by Color from the menu in the upper-right corner.

Organizing and reusing colors

Swatches panel allows you to organize colors and color palettes in a hierarchical structure using Folders and Color Palettes.

Creating a folder

By default, all colors are arranged within the Default Swatches folder. You can arrange existing colors within folders using the Swatches panel. To create a new folder, do the following:

1 In Animate CC, select **Window** > **Swatches**

2 On the Swatches panel, click the button.

3 Provide a meaningful name for the swatches folder.

You can also create a folder by selecting a folder, color palette, or swatch and selecting the Duplicate as Folder option from the fly-out menu.

Creating a color palette (swatch group)

Color Palette is a group of swatches (colors) that signifies a color theme for your content. You can create color palettes within folders and add swatches to them. To create a Color Palette, do the following:

1 In Animate CC, select **Window** > **Swatches**.

2 On the Swatches panel, select any folder and click the button to create an empty palette.

3 You can drag an existing color or click the button to add swatches to the color palette.

You can also create a color palette by selecting a folder, color palette, or swatch and selecting the Duplicate as Palette option from the fly-out menu.

Creating or adding colors to a color palette

You can create swatches or add existing ones to color palettes. To create a swatch, do the following:

1 In Animate CC, select Window > Swatches.

2 On the Swatches panel, select any color palette within a folder, and click the button to create a swatch. A new swatch is created using the current selected fill color in the Colors panel. You may also select an existing swatch and click the button to duplicate the swatch within the palette.

You can also create a swatch by selecting a folder, color palette, or swatch and selecting the **Duplicate as Swatch** option from the fly-out menu.

1 In the Swatches panel, select one of the following commands from the menu in the upper-right corner:

- To append the imported colors to the current palette, select Add Colors.
- To replace the current palette with the imported colors, select Replace Colors.

2 Navigate to the desired file, select it, and click OK.

1 In the Swatches panel, select Save Colors from the menu in the upper-right corner and enter a name for the color palette.

2 For Save As Type (Windows) or Format (Macintosh), select Animate Color Set or Color Table. Click Save.

Create or edit a solid color

You can create any color using the Color panel. If an object is selected on the Stage, the color modifications you make in the Color panel are applied to the selection. You can select colors in RGB or HSB, or you can expand the panel to use hexadecimal mode. You can also specify an alpha value to define the degree of transparency for a color. In addition, you can select a color from the existing color palette.

You can expand the Color panel to display a larger color space in place of the color bar, a split color swatch showing the current and previous colors, and a Brightness slider to modify color brightness in all color modes.

1 To apply the color to existing artwork, select an object or objects on the Stage, and select Window > Color.

2 Click the Stroke or Fill icon to specify which attribute to modify.

Note:

Click the icon, not the Color control, or the Color Picker opens.

3 If you selected the Fill icon in step 3, verify that Solid is selected in the Type menu.

4 If an object is selected on the Stage, the color modifications you make in the Color panel are applied to the selection. Do one of the following:

- To select a color, click in the color space in the Color panel. To adjust the brightness of the color, drag the Brightness slider.

  ***note**: To create colors other than black or white, make sure the Brightness slider is not set to either extreme.*

- Enter values in the color value boxes: Red, Green, and Blue values for RGB display; Hue, Saturation, and Brightness values for HSB display; or hexadecimal values for hexadecimal display. Enter an Alpha value to specify the degree of transparency, from 0 for complete transparency to 100 for complete opacity.
- To return to the default color settings, black and white (black stroke and white fill), click the Black and White button .
- To swap colors between the fill and the stroke, click the Swap Colors button .
- To apply no color to the fill or stroke, click the No Color button .

***note**: You cannot apply a stroke or fill of No Color to an existing object. Instead, select the existing stroke or fill, and delete it.*

- Click the Stroke or Fill Color control, and select a color.

5 To add the new color to the color swatch list for the current document, select Add Swatch from the menu in the upper-right corner.

Duplicate, delete, and clear colors

Duplicate colors in the palette, delete individual colors, or clear all colors from the palette.

- To duplicate or delete a color, select Window > Swatches, click the color to duplicate or delete, and select Duplicate Swatch or Delete Swatch from the panel menu. When duplicating a swatch, the paint bucket appears. Click in the empty area of the Swatches panel with the paint bucket to make a duplicate of the selected color.
- To clear all colors from the color palette, in the Swatches panel, select Clear Colors from the panel menu. All colors except black and white are removed from the palette.

Automating tasks with the Commands menu

Create and manage commands

To repeat the same task, create a command in the Commands menu from steps in the History panel and reuse the command. Steps replay exactly as they were originally performed. You can't modify the steps as you replay them.

To use steps the next time you start Animate, create and save a command. Saved commands are retained permanently, unless you delete them. Steps that you copy using the History panel Copy Steps command are discarded when you copy something else.

Create a command from selected steps in the History panel. Rename or delete commands in the Manage Saved Commands dialog box.

Create a command

1 Select a step or set of steps in the History panel.

2 Select Save As Command from the History panel options menu.

3 Enter a name for the command and click OK. The command appears in the Commands menu.

Note:

The command is saved as a JavaScript file (with the extension .jsfl) in your Commands folder. This folder is in the following locations: Windows XP: boot drive\Documents and Settings\<user>\Local Settings\Application Data\Adobe\Flash CS5\<language>\Configuration\Commands; Mac OS® X: Macintosh HD/Users/<username>/Library/Application Support/Adobe/Flash CS5/<language>/Configuration/Commands.

Edit the names of commands in the Commands menu

1 Select Commands > Manage Saved Commands.

2 Select a command to rename.

3 Click the Rename button.

4 Enter the new name and click OK.

Delete a name from the Commands menu

1 Select Commands > Manage Saved Commands, and select a command.

2 Click Delete, click Yes in the warning dialog box, and click OK.

Run commands

- To use a saved command, select the command from the Commands menu.
- To run a JavaScript or Animate JavaScript command, select Commands > Run Command, navigate to the script to run, and click Open.

Get more commands

Use the Get More Commands option in the Commands menu to link to the Adobe Add-ons website and download commands that other Animate users have posted. For more information on the commands posted there, see the Animate Exchange website.

1 Make sure you are connected to the Internet.

2 Select Commands > Get More Commands.

Steps that can't be used in commands

Some tasks can't be saved as commands or repeated using the Edit > Repeat menu item. These commands can be undone and redone, but they cannot be repeated.

Examples of actions that can't be saved as commands or repeated include selecting a frame or modifying a document size. If you attempt to save an unrepeatable action as a command, the command is not saved.

"Strokes, fills, and gradients with Animate CC"

Create or edit a gradient fill

A gradient is a multicolor fill in which one color gradually changes into another color. Animate CC (formerly Flash Professional CC) lets you apply up to 15 color transitions to a gradient. Creating a gradient is a good way to create a smooth color gradation across one or more objects. You can save a gradient as a swatch to make it easy to apply the gradient to multiple objects. Animate can create two types of gradients:

Linear gradients change color along a single axis (horizontal or vertical).

Radial gradients change color in an outward direction starting from a central focal point. You can adjust the direction of a gradient, its colors, the location of the focal point, and many other properties of the gradient.

Animate CC provides additional control over linear and radial gradients for use with Flash Player. These controls, called overflow modes, let you specify how colors are applied beyond the gradient.

1 To apply a gradient fill to existing artwork, select an object or objects on the Stage.

2 If the Color panel is not visible, select Window > Color.

3 To select a color display mode, select RGB (the default setting) or HSB from the panel menu.

4 Select a gradient type from the Type menu:

Linear Creates a gradient that shades from the starting point to the end point in a straight line.

Radial Produces a gradient that blends outward in a circular path from a central focal point.

***note**: When you select a linear or radial gradient, the Color panel also includes two other options if you are publishing for Flash Player 8 or later. First, the Overflow menu is enabled below the Type menu. Use the Overflow menu to control the colors applied past the limits of the gradient. Second, the gradient definition bar appears, with pointers below the bar indicating the colors in the gradient.*

5 (Optional) From the Overflow menu, select an overflow mode to apply to the gradient: Extend (the default mode), Reflect, or Repeat.

6 (Optional) To create an SVG-compliant (Scalable Vector Graphics) linear or radial gradient, select the Linear RGB check box. This will allow the gradient to look smooth when scaled to different sizes after it is first applied.

7 To change a color in the gradient, select one of the color pointers below the gradient definition bar (the triangle at the top of the selected color pointer will turn black). Then click in the color space pane that appears above the gradient bar. Drag the Brightness slider to adjust the lightness of the color.

8 To add a pointer to the gradient, click on or below the gradient definition bar. Select a color for the new pointer, as described in the previous step.

You can add up to 15 color pointers, letting you create a gradient with up to 15 color transitions.

9 To reposition a pointer on the gradient, drag the pointer along the gradient definition bar. Drag a pointer down and off of the gradient definition bar to remove it.

10 To save the gradient, click the triangle in the upper-right corner of the Color panel, and select Add Swatch from the menu.

The gradient is added to the Swatches panel for the current document.

11 To transform the gradient, such as to make a vertical gradient instead of a horizontal one, use the Gradient Transform tool. See Transform gradient and bitmap fillsfor more information.

Adjust Stroke and Fill color

You can specify the stroke and fill color of graphic objects and shapes using either the Stroke Color and Fill Color controls in the Tools panel, or the Stroke Color and Fill Color controls in the Property inspector.

The Stroke Color and Fill Color section of the Tools panel contains controls for activating the Stroke Color and Fill Color boxes, which in turn determine whether the strokes or fills of selected objects are affected by color choices. Also, the Colors section has controls for quickly resetting colors to the default, setting the stroke and fill color settings to None, and swapping fill and stroke colors.

In addition to letting you select a stroke and fill color for a graphic object or shape, the Property inspector provides controls for specifying the stroke width and style.

To use these controls to change the painting attributes of existing objects, first select the objects on the Stage.

Also see: Live Preview of Colors.

Adjust stroke and fill color using the Tools panel

The Tools panel Stroke Color and Fill Color controls set the painting attributes of new objects you create with the drawing and painting tools. To use these controls to change the painting attributes of existing objects, first select the objects on the Stage.

- Click the Stroke or Fill Color control, and select a color swatch.
- Click the System Color Picker button in the pop-up window, and select a color. You could also hover the pointer over different colors to preview the effect of the color on the shape.
- Type a color's hexadecimal value in the box.
- To return to the default color settings (white fill and black stroke), click the Black And White button in the Tools panel.
- To remove any stroke or fill, click the No Color button.

  Note: The No Color button appears only when you are creating an oval or rectangle. You can create an object without a stroke or fill, but you cannot use the No Color button with an existing object. Instead, select the existing stroke or fill and delete it.
- To Swap colors between the fill and the stroke, click the Swap Colors button in the Tools panel.

Animate CC allows you to preview Stroke or Fill colors live when changing them from the Color Swatch. For more information, see Live Preview of Colors.

Apply a solid color fill using the Property inspector

1. Select a closed object or objects on the Stage.
2. Select Window > Properties.
3. To select a color, click the Fill Color control and do one of the following:
   - Select a color swatch from the palette.
   - Type a color's hexadecimal value in the box.

Select a stroke color, style, and weight using the Property inspector

To change the stroke color, style, and weight for a selected object, use the Stroke Color control in the Property inspector. For stroke style, choose from styles that are preloaded with Animate, or create a custom style. To select a solid color fill, use the Fill Color control in the Property inspector.

1. Select an object or objects on the Stage (for symbols, first double-click to enter symbol-editing mode).
2. Select Window > Properties.
3. To select a stroke style, click the Style menu and select an option. To create a custom style, click Custom in the Property inspector, select options in the Stroke Style dialog box, and click OK.

   Note:

   Selecting a stroke style other than Solid can increase file size.
4. To select a stroke weight, set the Stroke slider or enter a value in the text box.
5. To enable stroke hinting, select the Stroke Hinting check box. Stroke hinting adjusts line and curve anchors on full pixels, preventing blurry vertical or horizontal lines.
6. To set the style for a path end, select a Cap option:

   None Is flush with the path's end.

Round Adds a round cap that extends beyond the path end by half the stroke width.

Square Adds a square cap that extends beyond the path by half the stroke width.

7 (Optional) If you are drawing lines using the Pencil or Brush tools with the drawing mode set to Smooth, use the Smoothing slider to specify the degree to which Animate smooths the lines you draw.

By default, the Smoothing value is set to 50, but you can specify a value from 0 to 100. The greater the smoothing value, the smoother the resulting line.

Note:

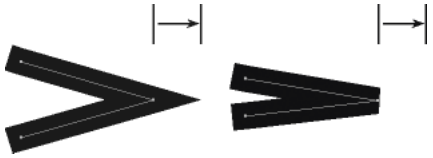
When the drawing mode is set to Straighten or Ink, the Smoothing slider is disabled.

8 To define how two path segments meet, select a Join option. To change the corners in an open or closed path, select a path and select another join option.

Miter, round, and bevel joins.

9 To avoid beveling a Miter join, enter a Miter limit.

Line lengths exceeding this value are squared instead of pointed. For example, a Miter limit of 2 for a 3-point stroke means that when the length of the point is twice the stroke weight, Animate removes the limit point.



Applying a Miter limit.

Adjust the strokes of multiple lines or shapes

To change the stroke color, width, and style of one or more lines or shape outlines, use the Ink Bottle tool. You can apply only solid colors, not gradients or bitmaps, to lines or shape outlines.

Using the Ink Bottle tool, rather than selecting individual lines, makes it easier to change the stroke attributes of multiple objects at one time.

1 Select the Ink Bottle tool from the Tools panel.

2 Select a stroke color.

3 Select a stroke style and stroke width from the Property inspector.

4 To apply the stroke modifications, click an object on the Stage.

Copy strokes and fills

Use the Eyedropper tool to copy fill and stroke attributes from one object and immediately apply them to another object. The Eyedropper tool also lets you sample the image in a bitmap to use as a fill.

1 To apply the attributes of a stroke or filled area to another stroke or filled area, select the Eyedropper tool and click the stroke or filled area whose attributes you want to apply.

When you click a stroke, the tool automatically changes to the Ink Bottle tool. When you click a filled area, the tool automatically changes to the Paint Bucket tool with the Lock Fill modifier turned on.

2 Click another stroke or filled area to apply the new attributes.

Modifying painted areas

The Paint Bucket tool fills enclosed areas with color. This tool lets you do the following:

- Fill empty areas, and change the color of already painted areas.
- Paint with solid colors, gradients, and bitmap fills.
- Use the Paint Bucket tool to fill areas that are not entirely enclosed.
- Have Animate close gaps in shape outlines as you use the Paint Bucket tool.

1 Select the Paint Bucket tool from the Tools panel.

2 Select a fill color and style.

3 Click the Gap Size modifier that appears at the bottom of the Tools panel and select a gap size option:

- Don't Close Gaps to close gaps manually before filling the shape. Closing gaps manually can be faster for complex drawings.
- A Close option to have Animate fill a shape that has gaps.

Note:

If gaps are too large, you might have to close them manually.

4 Click the shape or enclosed area to fill.

Transform gradient and bitmap fills

You can transform a gradient or bitmap fill by adjusting the size, direction, or center of the fill.

1 Select the Gradient Transform tool from the Tools panel. If you do not see the Gradient Transform tool in the Tools panel, click and hold on the Free Transform tool and then select the Gradient Transform tool from the menu that appears.

2 Click an area filled with a gradient or bitmap fill. A bounding box with editing handles appears. When the pointer is over any one of these handles, it changes to indicate the function of the handle.

Center point The rollover icon for the center point handle is a four-way arrow.

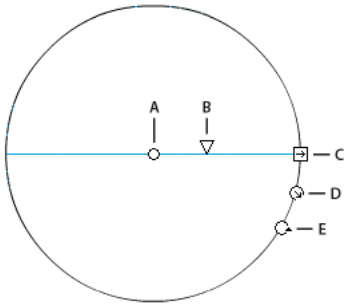
Focal point The focal point handle appears only when you select a radial gradient. The rollover icon for the focal point handle is an inverted triangle.

Size The rollover icon for the size handle (middle handle icon on the edge of the bounding box) is a circle with an arrow inside of it.

Rotation Adjusts the rotation of the gradient. The rollover icon for the rotation handle (the bottom handle icon on the edge of the bounding box) is four arrows in the shape of a circle.

Width Adjusts the width of the gradient. The rollover icon for the width handle (the square handle) is a double-ended arrow.

Press Shift to constrain the direction of a linear gradient fill to multiples of 45°.

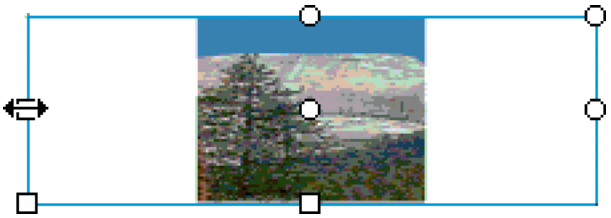


Radial gradient controls
***A** Center point **B** Width **C** Rotation **D** Size **E** Focal point.*

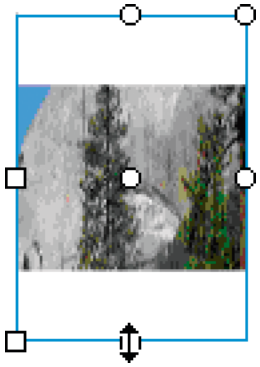
3 Reshape the gradient or fill in any of the following ways:

- To reposition the center point of the gradient or bitmap fill, drag the center point.

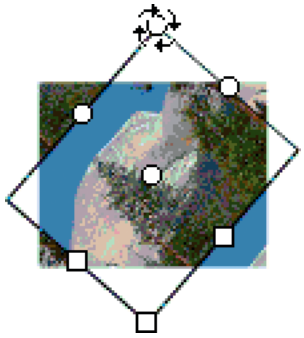
- To change the width of the gradient or bitmap fill, drag the square handle on the side of the bounding box. (This option resizes only the fill, not the object containing the fill.)



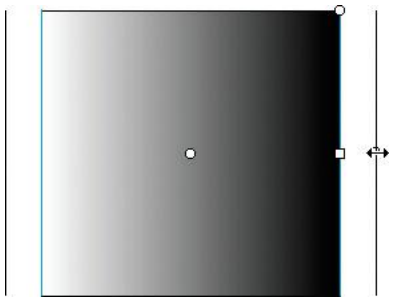
- To change the height of the gradient or bitmap fill, drag the square handle at the bottom of the bounding box.



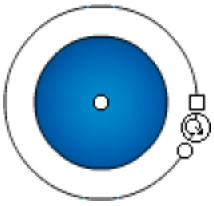
- To rotate the gradient or bitmap fill, drag the circular rotation handle at the corner. You can also drag the lowest handle on the bounding circle of a circular gradient or fill.



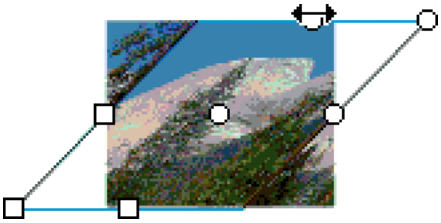
- To scale a linear gradient or a fill, drag the square handle at the center of the bounding box.



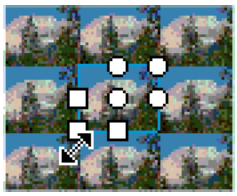
- To change the focal point of a circular gradient, drag the middle circular handle on the bounding circle.



- To skew or slant a fill within a shape, drag one of the circular handles on the top or right side of the bounding box.



- To tile a bitmap inside a shape, scale the fill.



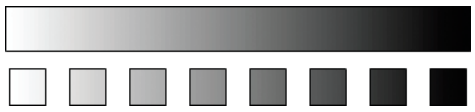
Note:

To see all the handles when working with large fills or fills close to the edge of the Stage, select View > Pasteboard.

Lock a gradient or bitmap to fill the Stage

You can lock a gradient or bitmap fill to make it appear that the fill extends over the entire Stage and that the objects painted with the fill are masks revealing the underlying gradient or bitmap.

When you select the Lock Fill modifier with the Brush or Paint Bucket tool and paint with the tool, the bitmap or gradient fill extends across the objects you paint on the Stage.



Using the Lock Fill modifier creates the appearance of a single gradient or bitmap fill being applied to separate objects on the Stage.

Use a locked gradient fill

1. Select the Brush or Paint Bucket tool and select a gradient or bitmap as a fill.
2. Select Linear or Radial from the Type menu in the Color panel.
3. Click the Lock Fill modifier .

4 First paint the areas where you want to place the center of the fill, and then move to other areas.

Use a locked bitmap fill

1 Select the bitmap to use.

2 Select Bitmap from the Type menu in the Color panel.

3 Select the Brush or Paint Bucket tool.

4 Click the Lock Fill modifier .

5 First paint the areas where you want to place the center of the fill, and then move to other areas.

Draw lines & shapes with Adobe Animate

Draw straight lines with the Line Segment tool

To draw one straight line segment at a time, use the Line tool.

1 Select the Line tool .

2 Select Window > Properties and select stroke attributes.

Note:

You cannot set fill attributes for the Line tool.

3 Click the Object Drawing button in the Options section of the Tools panel to select either Merge or Object Drawing mode. When the Object Drawing button is depressed, the Line tool is in Object Drawing mode.

4 Position the pointer where the line is to begin, and drag to where the line is to end. To constrain the angle of the line to multiples of 45°, Shift-drag.

Draw rectangles and ovals

The Oval and Rectangle tools let you create these basic geometric shapes, and apply strokes, fills, and specify rounded corners. In addition to the Merge and Object drawing modes, the Oval and Rectangle tools also provide the Primitive Object drawing mode.

When you create rectangles or ovals using the Rectangle Primitive or Oval Primitive tools, Animate draws the shapes as separate objects. These shapes unlike the shapes you create using Object Drawing mode. The primitive shape tools let you specify the corner radius of rectangles using controls in the Property inspector. And also the start and end angle, and the inner radius of ovals. After you create a primitive shape, alter the radius and dimensions by selecting the shape on the Stage and adjusting the controls in the Property inspector.

note: When either of the Primitive Object drawing tools is selected, the Property inspector retains the values of the last primitive object that you edited. For example, if you modify a rectangle and then draw a second rectangle.

Note:To draw from the center of the Stage, hold the Alt key when drawing a shape.

Draw rectangle primitives

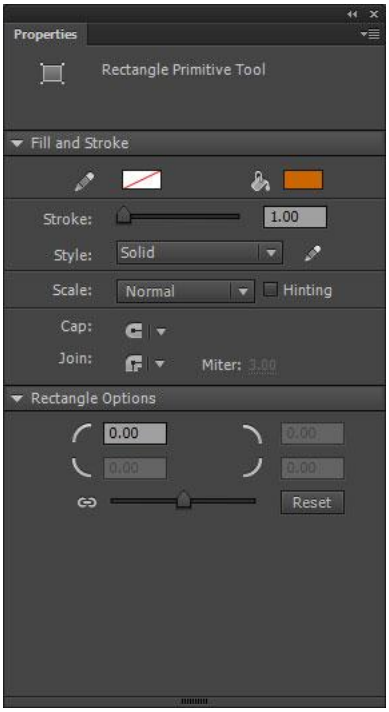
1 To select the Rectangle Primitive tool, click and hold the mouse button on the Rectangle tool , and select the Rectangle Primitive tool from the pop-up menu.

2 To create a rectangle primitive, drag with the Rectangle Primitive tool on the Stage.

Note:

To change the corner radius while dragging with the Rectangle primitive tool, press the Up Arrow key or Down Arrow key. When the corners achieve the desired roundness, release the key.

3 With the rectangle primitive selected, you can use the controls in the Property inspector to further modify the shape or specify fill and stroke colors.



Properties for a rectangle primitive.

Theses Property inspector controls are specific to the Rectangle Primitive tool:

Rectangle Corner Radius Controls Let you specify the corner radiuses for the rectangle. You can enter a numeric value for the inner radius in each text box. Entering a negative value creates an inverse radius. You can also deselect the constrain corner radius icon, and adjust each corner radius individually.

Reset Resets all of the Rectangle Primitive tool controls, and restores the rectangle primitive shape drawn on the Stage to its initial size and shape.

4 To specify a different corner radius for each corner, deselect the Lock icon in the Rectangle Options area of the Property inspector. When locked, the radius controls are restrained so that each corner uses the same radius.

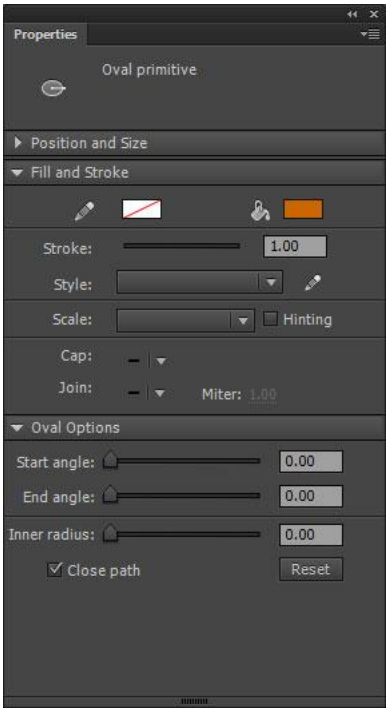
5 To reset the corner radii, click the Reset button in the Property inspector.

Draw oval primitives

1 Click and hold the mouse button on the Oval tool , and select the Oval Primitive tool .

2 To create an oval primitive, drag the Primitive Oval tool on the Stage. To constrain the shape to a circle, Shift-drag.

3 With the oval primitive selected on the Stage, you can use the controls found in the Property inspector to further modify the shape or specify fill and stroke colors.



Properties for an oval primitive.

These Property inspector controls are specific to the Oval Primitive tool:

Start Angle/End Angle The angle of the start point and end point of the oval. Using these controls, you can easily modify the shape of ovals and circles into pie slices, half circles, and other creative shapes.

Inner Radius An inner radius (or oval) within the oval. You can either enter a numeric value for the inner radius in the box or click the slider and interactively adjust the size of the inner radius. You can enter values from 0 to 99 representing the percentage of fill that is removed.

Close Path Determines whether the path (or paths, if you are specifying an inner radius) of the oval is closed. If you specify an open path, no fill is applied to the resulting shape, only the stroke is drawn. Close Path is selected by default.

Reset Resets all of the Oval Primitive tool controls and restores the oval primitive shape drawn on the Stage to its initial size and shape.

Draw ovals and rectangles

The Oval and Rectangle tools create these basic geometric shapes.

1. To select the Rectangle tool or Oval tool , click and hold the mouse button on the Rectangle tool or Oval tool and drag.
2. To create a rectangle or oval, drag the Rectangle or Oval tool on the Stage.
3. For the Rectangle tool, specify rounded corners by clicking the Round Rectangle modifier and entering a corner radius value. A value of zero (0) creates square corners.
4. Drag on the Stage. If you are using the Rectangle tool, press the Up Arrow and Down Arrow keys while dragging to adjust the radius of rounded corners.

For the Oval and Rectangle tools, Shift-drag to constrain the shapes to circles and squares.

5 To specify a specific size of oval or rectangle, select the Oval or Rectangle tool and press the Alt key (Windows) or Option key (Macintosh). Then click the Stage to display the Oval And Rectangle Settings dialog box.

- For ovals, specify the width and height in pixels and whether to draw the oval from the center.
- For rectangles, specify the width and height in pixels, the radius of the rounded corners, and whether to draw the rectangle from the center.

See also: Live Preview of Colors.

Draw polygons and stars

1 Select the PolyStar tool by clicking and holding the mouse button on the Rectangle tool and selecting from the pop-up menu that appears.

2 Select Window > Properties and select fill and stroke attributes.

3 Click Options and do the following:

- For Style, select Polygon or Star.
- For Number Of Sides, enter a number from 3 through 32.
- For Star Point Size, enter a number from 0 through 1 to specify the depth of the star points. A number closer to 0 creates deeper points (like needles). If you are drawing a polygon, leave this setting unchanged. (It does not affect the polygon shape.)

4 Click OK.

5 Drag on the Stage.

See also: Live Preview of Colors.

Object drawing mode

While selecting and drawing objects, the object drawing mode shows a thin outline along the shape regions according to the layer color. The small circles are indicate the anchor points and are not interactive or editable using the selection tool. While drawing in object mode, the strokes and shapes are no longer selected by default.

Outlines around a shape

Draw with the Pencil tool

To draw lines and shapes, use the Pencil tool, in much the same way that you use a real pencil to draw. To apply smoothing or straightening to the lines and shapes as you draw, select a drawing mode for the Pencil tool.

1 Select the Pencil tool .

2 Select Window > Properties and select a stroke color, line weight, and style.

3 Select a drawing mode under Options in the Tools panel:

- To draw straight lines and convert approximations of triangles, ovals, circles, rectangles, and squares into these common geometric shapes, select Straighten .
- To draw smooth curved lines, select Smooth .
- To draw freehand lines with no modification applied, select Ink .

Lines drawn with Straighten, Smooth, and Ink mode, respectively.

4 To draw with the Pencil tool, Shift-drag to constrain lines to vertical or horizontal directions, click the Stage, and drag.

Paint with the Brush tool

The Brush tool draws brush-like strokes. It creates special effects, including calligraphic effects. Select a brush size and shape using the Brush tool modifiers.

Animate scales the brush size proportionately to the changing zoom level of the stage. This allows you to draw seamlessly adjusting to any zoom level and preview your work as you draw. If you want to revert to the earlier default behavior of brushes maintaining a constant pixel size even when you change the zoom level of the stage, you must disable the 'Stage zoom level' checkbox in the brush Property Inspector.

If you disable the Stage zoom level checkbox, the brush size for new strokes remains constant even when you change the magnification level for the Stage. So, the same brush size appears larger when the Stage magnification is lower. For example, suppose you set the Stage magnification to 100% and paint with the Brush tool using the smallest brush size. Then, you change the magnification to 50% and paint again using the smallest brush size. The new stroke that you paint appears 50% thicker, uniform and accurate without any non-tapering ends than the earlier stroke and (Changing the magnification of the Stage does not change the size of existing brush strokes.)

Use an imported bitmap as a fill when painting with the Brush tool. See Break apart groups and objects.

If you have a Wacom pressure-sensitive tablet connected to your computer, vary the width and angle of the brush stroke. This can be achieved by using the Brush tool Pressure and Tilt modifiers, and varying pressure on the stylus.

The Pressure modifier varies the width of brush strokes when you vary the pressure on the stylus. The Tilt modifier varies the angle of brush strokes when you vary the angle of the stylus on the tablet. The Tilt modifier measures the angle between the top (eraser) end of the stylus and the top (north) edge of the tablet. For example, if you hold the pen vertically against the tablet, the Tilt is 90. The Pressure and Tilt modifiers are both fully supported for the eraser function of the stylus.

Note: On a tablet, the Tilt and Pressure options for Brush Tool function only when you use the Pen mode. The mouse mode does not enable these options.

A variable-width brush stroke drawn with a stylus.

1. Select the Brush tool .
2. Select Window > Properties and select a fill color.
3. Click the Brush Mode modifier and select a painting mode:

   Paint Normal Paints over lines and fills on the same layer.

   Paint Fills Paints fills and empty areas, leaving lines unaffected.

   Paint Behind Paints in blank areas of the Stage on the same layer, leaving lines and fills unaffected.

   Paint Selection Applies a new fill to the selection when you select a fill in the Fill Color control or the Fill box of the Property inspector, the same as selecting a filled area and applying a new fill.

   Paint Inside Paints the fill in which you start a brush stroke and never paints lines. If you start painting in an empty area, the fill doesn't affect any existing filled areas.
4. Select a brush size and brush shape from the Brush tool modifiers.
5. To zoom the brush proportionately to the zoom level of the stage as you increase or decrease it while you draw, select the **Zoom size with stage** check box. This allows you to draw seamlessly adjusting to any zoom level and preview your work as you draw.
6. If a Wacom pressure-sensitive tablet is attached to your computer, select the Pressure modifier, the Tilt modifier, or both, to modify brush strokes.
   - Select the Pressure modifier to vary the width of your brush strokes by varying the pressure on your stylus.
   - To vary the angle of your brush strokes by varying the angle of the stylus on the Wacom pressure-sensitive tablet, select the Tilt modifier.
7. Drag on the Stage. To constrain brush strokes to horizontal and vertical directions, Shift-drag.

Drawing preview and output

The **Traditional Brush** tool and the **Paint Brush** tool have been enhanced in the CC 2015.1 release to give you much more accurate and smoother drawing experience. The final stroke that will be generated is now very close to the live preview. With this, you do not see any unpredictable thinning or thickening of the brush strokes. Even the finer curves drawn using brush tool do not show any breakages or gaps.

Create custom brushes

The Brush Tool allows you to custom-define a brush by setting parameters of the brush such as shape and angle. This enables you to create natural artwork in your projects by customizing the brush tool to suit your drawing needs. You can choose, edit and create a custom brush in Animate through the Property Inspector, when the brush tool is selected in the toolbox. To learn how to create, edit, and delete custom brushes, see Custom Brushes.

Pressure and Tilt in Paint Brush

Using Pressure and Tilt modifiers

Animate CC provides Pressure and Tilt support for strokes drawn using the Paint brush tool. You can draw art and pattern strokes with variable width, dependent on the applied pressure or tilt on the stylus. For further refinement, use the Width tool to adjust the width points.

For more information, see Working with PaintBrush.

Note:

Pressure and tilt icons in the tool bar are displayed only if you have connected a Wacom pressure-sensitive tablet to your computer.

Brush Library

Animate CC has an integrated global library for Vector Brushes that includes a vast collection of Art and Pattern brushes. To launch the Brush Library Panel, click **Windows > Brush Library** or click on the Brush icon in the Property Inspector. Before using any brush, double-click any brush to add it to your current document.

Import new Vector Brushes from CC Libraries

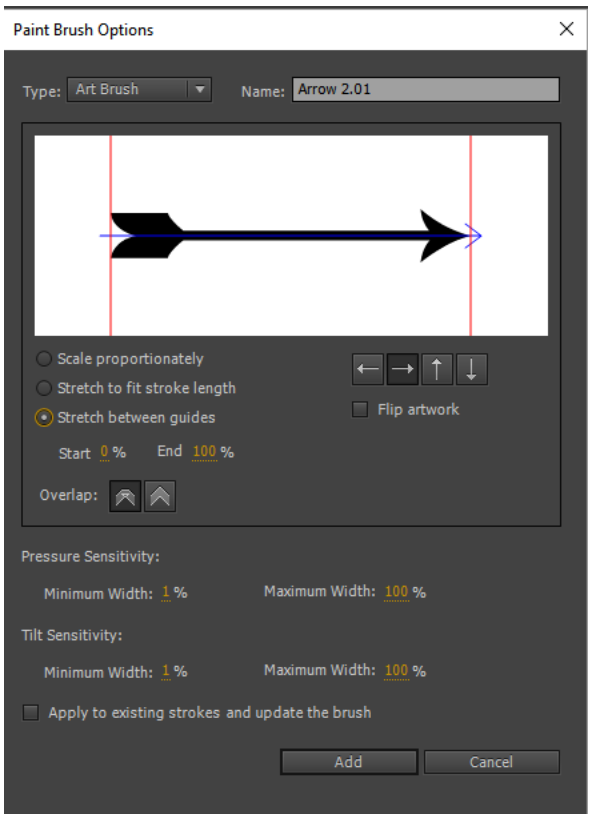
You can import new Art and Pattern Brushes to your Animate document using the CC Libraries in addition to the brush presets available by default. To add a new Art or Pattern Brush, open the CC libraries panel and just click on any of the supported brushes. (Animate currently supports only Illustrator brushes from CC Libraries.) For adding new brushes to your CC Library, you can use the Brush App for Android and iOS. Clicking on a brush in CC Library adds it to both the global Brush Library panel and the current document.

You can use any brush as either an Art or Pattern brush. By default, the brushes are added as Art brushes. To modify it to a Pattern brush, use the **Edit brush** option and select the **Brush type** as **Pattern brush**.

Editing brushes

The Edit Brush icon launches the Brush editing dialog box for the selected brush. If you select an Art Brush for editing, the Art Brush Options dialog box appears. You can modify properties such as brush direction, scaling preferences, and overlap preference, and apply the changes to the existing strokes.

For more information, see Working with Paint Brush.



Art Brush options

Enhancing strokes and shapes using the Variable Width tool

The Width tool allows you to embellish a stroke by adding widths of varying thickness. Variable width can then be saved as Width Profiles that can be applied to other strokes. You can select the Width tool from the Tools panel or using the Keyboard Shortcut (U).

When you mouseover a stroke with the Width tool selected, points (Width Point) appears on the stroke with handles (Width Handle). You can adjust the stroke width, move the width point, copy the width point, and delete the width point. The Width information is displayed in the Info Panel when you modify Width of a stroke.

You can also select multiple Width Points, and perform any of actions (move, copy, or delete) mentioned earlier.

For multiple strokes, the Width Tool adjusts only the active stroke. If you want to adjust a stroke, mouse-over the stroke using the Width Tool.

Note:

Variable Width Strokes are converted to Uniform strokes, if a file containing variable width stroke is opened using an older version of Animate.

Adding variable width to a stroke using Width tool

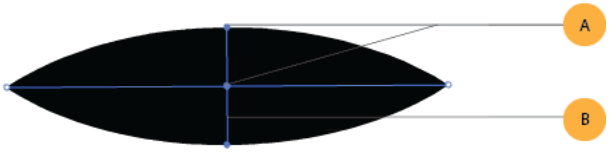
To add width to a stroke, do the following:

? Draw a stroke or shape using any of the tools. For example, Line tool.

Stroke create using the Line tool with Stroke Size set to 88, Style set to Solid, and also, using Width Profile 1.

1 Select the Width Tool from the tools panel.

2 With the Width Tool selected, mouseover the stroke. This displays potential Width Points and Width Handles. The tool also changes its appearance to , indicating that the Width Tool is active and variable width can be applied to the stroke.

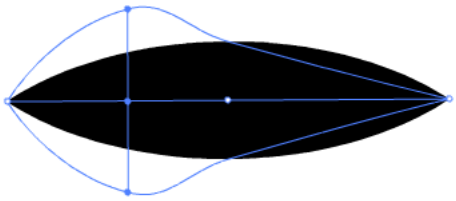


(A) Width Point (B) Width Handle

? With the point selected using the Width Tool, drag the Width Handle outwards.

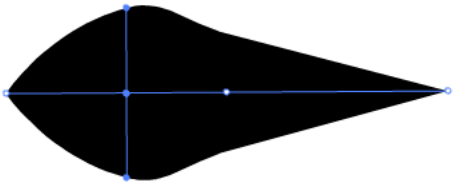
Note:

The size of the Width is constrained to 100 pixels on either side of the Width point.



Add width by dragging outwards

? You can see that variable width is added to stroke. Select the Width Tool and mouseover the stroke, this displays the new Width Point and Width Handle.



Variable width is added to the stroke with the Width Point and Width Handle highlighted.

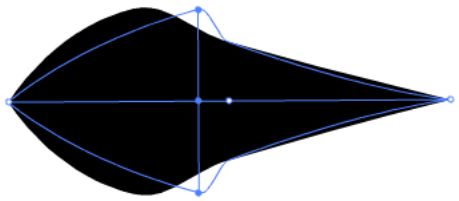
Moving or copying variable width applied to a stroke

You can move or copy Width Points created for a stroke, which in effect, moves or copies variable width applied to stroke. To move a width point, do the following:

1. Select the Width tool from the tools panel.
2. Mouseover the stroke to display existing width points, and select the Width Point you want to move.
3. Drag the Width Point along the stroke.

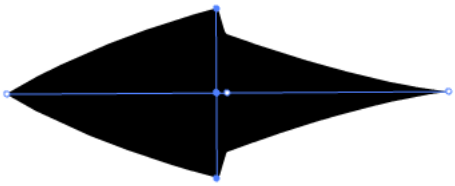
Note:

Movement of the Width Point is constrained by the next successive Width Point on either sides.



Moving a Width point

? Width point is moved to its new location, and thereby also modifying the stroke accordingly.



Width point is moved to its new location

To copy a Width Point, do the following:

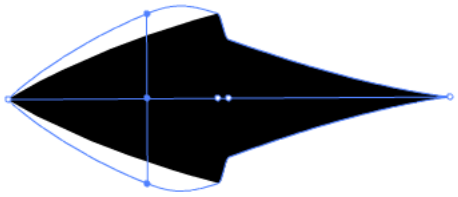
1 Select the Width tool from the tools panel.

2 Mouseover the stroke to display existing Width Points, and select the point you want to copy.

3 Hold **Alt** (**Option** for Mac) and drag the width point along the stroke to copy the selected Width point.

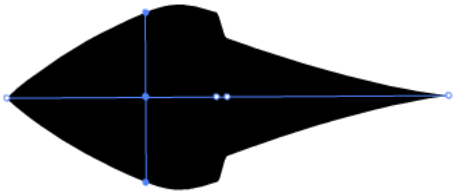
Note:

Movement of the point is constrained by the next successive Width Point on either sides.



Copying a Width point

? Width point is copied. This also modifies the stroke accordingly.

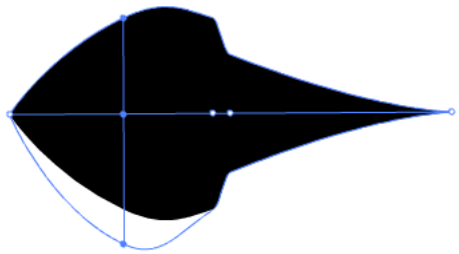


Width point is copied

Modifying variable width of a stroke

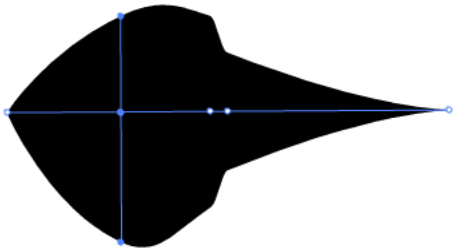
Modifying the variable width of a stroke at any Width point, expands or contracts the stroke proportionally on either sides of the Width Point. However, if you want to modify the width on any one side of the point, do the following:

1. Select the Width tool from the tools panel.
2. Mouseover the stroke to display existing Width Points, and choose the Width Point from either ends of the Width Handle that you want to modify.
3. Hold **Alt** (**Option** for Mac) and drag the Width Handle outwards to modify the selected Width Point.



Modifying Width of a stroke

? The Width point is moved, and the stroke is modified accordingly.

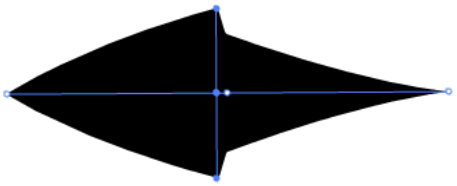


Width point is moved asymmetrically, and the stroke is modified accordingly.

Deleting variable width of a stroke

To delete a Width point, do the following:

1. Mouse over and select the Width point you want to delete.
2. Press Backspace or Delete to delete the Width point.



Width point is deleted, and the stroke is modified

Width tool controls

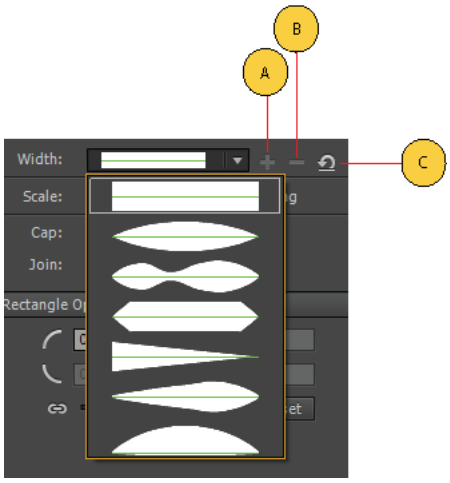
The following table lists the keyboard modifiers to use while working with the Width tool:

Width control tasks	Keyboard modifiers
Create non-uniform widths	Alt+drag (Windows) or Opt+drag (Mac OS)
Create a copy of the width point	Alt+drag the width point (Windows) or Opt+drag the width point (Mac OS)
Copy and move all the points along the path	Alt+Shift+drag (Windows) or Opt+Shift+drag (Mac OS)
Select multiple width points and drag them	Shift+click+drag
Delete selected width points	Delete

Saving width profiles

After defining the stroke width, you can save the variable width profile from the Properties Inspector.

1. Select the stroke to which you added variable width.
2. Click the + button to the right of Width drop-down on Properties Inspector.
3. On the Variable Width Profile dialog, enter a **Profile Name**.
4. Click **Ok**.



A) Save Width Profile icon B) Delete Width Profile icon C) Reset Width Profile icon

Width profiles can then be applied to selected paths by choosing them from the Width Profile drop-down list in the Properties Panel. When a stroke with no variable width is selected, the list displays the Uniform option. To restore the default width profile set, click the Reset Profiles button.

Save width profile is enabled only when variable width apart from default width profiles is selected on the stage. You can create your own stroke profiles using width tool and save them. Similarly, delete width profile icon is enabled when custom width profile is selected in the drop down. In case you want to delete any custom profile, you can use this option.

Note:

Restoring the default width profile set in the PI, removes any custom saved profiles. You also sync the customs saved profiles to the cloud.

Live Color Preview

Live Color Preview feature displays the stroke and fill colors simultaneous when drawing a shape on the stage. It allows you to preview the near-final appearance of a shape when drawing. This feature is enabled for all drawing tools available within Animate.

The Live Color Preview feature is also enabled for Color Swatches within Animate. This allows you to preview changes of stroke or fill colors for a selected shape on the Stage. By hovering the pointer over a desired color, you can see the color change.

Live Color Preview is enabled for color swatches in the following panels:

- Tools panel
- Properties Inspector (PI)
- Stage PI
- Text PI
- Grid
- Guides

Arranging objects

Stack objects

In a layer, Animate stacks objects in the order in which they are created, placing the most recently created object at the top of the stack. The stacking order of objects determines how they appear when they overlap. You can change the stacking order of objects at any time.

Drawn lines and shapes always appear below groups and symbols on the stack. To move them up the stack, you must group them or make them into symbols.

Layers also affect the stacking order. Everything on Layer 2 appears in front of everything on Layer 1, and so on. To change the order of layers, drag the layer name in the Timeline to a new position.

1. Select the object.
2. Do one of the following:
   - Select Modify > Arrange > Bring To Front Or Send To Back to move the object or group to the top or bottom of the stacking order.
   - Select Modify > Arrange > Bring Forward Or Send Backward to move the object or group forward or backward one position in the stacking order.

If more than one group is selected, the groups move in front of or behind all unselected groups, while maintaining their order relative to each other.

Align objects

The Align panel lets you align selected objects along the horizontal or vertical axis. You can align objects vertically along the right edge, center, or left edge of the selected objects, or horizontally along the top edge, center, or bottom edge of the selected objects.

For a tutorial about the layout tools in Animate, see Use Layout Tools on the Animate Tutorials page.

1. Select the objects to align.
2. Select Window > Align.
3. To apply alignment modifications relative to Stage dimensions, in the Align panel, select To Stage.
4. To modify the selected object(s), select the alignment buttons.

Group objects

To manipulate elements as a single object, group them. For example, after creating a drawing, you might group the elements of the drawing so that you can easily select and move the drawing as a whole.

When you select a group, the Property inspector displays the *x* and *y* coordinates of the group and its pixel dimensions.

You can edit groups without ungrouping them. You can also select an individual object in a group for editing without ungrouping the objects.

? Select the objects to group. You can select shapes, other groups, symbols, text, and so on.

- To group objects, select Modify > Group, or press Control+G (Windows) or Command+G (Macintosh).
- To ungroup objects, select Modify > Ungroup, or press Control+Shift+G (Windows) or Command+Shift+G (Macintosh).

Edit a group or an object within a group

1. Select the group, and then select Edit > Edit Selected, or double-click the group with the Selection tool.

   Everything on the page that is not part of the group is dimmed, indicating that elements outside the group are inaccessible.
2. Edit any element within the group.
3. Select Edit > Edit All, or double-click a blank spot on the Stage with the Selection tool.

   Animate restores the group to its status as a single entity, and you can work with other elements on the Stage.

Break apart groups and objects

To separate groups, instances, and bitmaps into ungrouped, editable elements, you break them apart, which significantly reduces the file size of imported graphics.

Although you can select Edit > Undo immediately after breaking apart a group or object, breaking apart is not entirely reversible. It affects objects as follows:

- Severs a symbol instance's link to its master symbol
- Discards all but the current frame in an animated symbol
- Converts a bitmap to a fill
- Places each character into a separate text block when applied to text blocks

- Converts characters to outlines when applied to a single text character.

  Do not confuse the Break Apart command with the Ungroup command. The Ungroup command separates grouped objects, returning grouped elements to the state they were in before grouping. It does not break apart bitmaps, instances, or type, or convert type to outlines.

1. Select the group, bitmap, or symbol to break apart.
2. Select Modify > Break Apart.

Note:

Breaking apart animated symbols, or groups in an interpolated animation is not recommended and might have unpredictable results. Breaking apart complex symbols and large blocks of text can take a long time. You might need to increase the application's memory allocation to properly break apart complex objects.

Apply patterns with the Spray Brushtool

Spray Brush tool feature is deprecated with Animate CC.

The Spray Brush acts like a particle sprayer, letting you "brush" a pattern of shapes onto the Stage at one time. By default, the Spray Brush emits a spray of dot particles using the currently selected fill color. However, you can use the Spray Brush tool to apply a movie clip or graphic symbol as a pattern.

1. Select the Spray Brush tool.
2. In the Spray Brush tool Property inspector, select a fill color for the default spray of dots. Or, click Edit to select a custom symbol from the library.

   You can use any movie clip or graphic symbol in the library as a "particle." These symbol-based particles give you a great deal of creative control over artwork you create in Animate.
3. Click or drag on the Stage where you want the pattern to appear.

Spray Brush tool options

The Spray Brush tool options appear in the Property inspector when you select the Spray Brush from the Tools panel.

Edit Opens the Select Symbol dialog box, from which you select a movie clip or graphic symbol to use as a spray brush particle. When a symbol in the library is selected, its name appears next to the edit button.

Color selector Select a fill color for the default particle spray. The color selector is disabled when you use a symbol in the library as a spray particle.

Scale This property only appears when not using a symbol from the Library as the particle. Scale the symbol used as a spray particle. For example, a value of 10% makes the symbol 10% smaller. A value of 200% makes the symbol 200% larger.

Scale width This property only appears when using a symbol as the particle. Scale the width of a symbol used as a spray particle. For example, a value of 10% makes the symbol 10% narrower. A value of 200% makes the symbol 200% wider.

Scale height This property only appears when using a symbol as the particle. Scales the height of a symbol used as a spray particle. For example, a value of 10% makes the symbol 10% shorter. A value of 200% makes the symbol 200% taller.

Random scaling Specifies that each symbol-based spray particle is placed on Stage at a random scale, altering the size of each particle. This option is disabled when using the default spray of dots.

Rotate symbol This property only appears when using a symbol as the particle. Rotates the symbol-based spray particle around a center point.

Random rotation This property only appears when using a symbol as the particle. Specifies that each symbol-based spray particle is placed on Stage at a random degree of rotation. This option is disabled when you use the default spray of dots.

Width The width of the spray particle when not using a symbol from the Library.

Height The height of the spray particle when not using a symbol from the Library.

Brush Angle The amount of clock-wise rotation to apply to the spray particle when not using a symbol from the Library.

Applying blend modes

About blend modes

Blend modes let you create composite images. *Compositing* is the process of varying the transparency or color interaction of two or more overlapping objects. Blending lets you create unique effects by blending the colors in overlapping movie clips.

A blending mode contains the following elements:

Blend color The color applied to the blend mode.

Opacity The degree of transparency applied to the blend mode.

Base color The color of pixels underneath the blend color.

Result color The result of the blend's effect on the base color.

Blend modes depend on both the color of the object you're applying the blend to and the underlying color. Adobe® recommends that you experiment with the different blend modes to achieve the desired effect.

Normal Applies color normally, with no interaction with the base colors.

Layer Lets you stack movie clips on top of each other without affecting their color.

Darken Replaces only the areas that are lighter than the blend color. Areas darker than the blend color don't change.

Multiply Multiplies the base color by the blend color, resulting in darker colors.

Lighten Replaces only pixels that are darker than the blend color. Areas lighter than the blend color don't change.

Screen Multiplies the inverse of the blend color by the base color, resulting in a bleaching effect.

Overlay Multiplies or screens the colors, depending on the base colors.

Hard Light Multiplies or screens the colors, depending on the blend mode color. The effect is similar to shining a spotlight on the object.

Difference Subtracts either the blend color from the base color or the base color from the blend color, depending on which has the greater brightness value. The effect is similar to a color negative.

Add Commonly used to create an animated lightening dissolve effect between two images.

Subtract Commonly used to create an animated darkening dissolve effect between two images.

Invert Inverts the base color.

Alpha Applies an alpha mask.

Erase Removes all base color pixels, including those in the background image.

***note**: Erase and Alpha blend modes require that a Layer blend mode be applied to the parent movie clip. You cannot change the background clip to Erase and apply it because the object would appear invisible.*

Blend mode examples

The following examples illustrate how different blend modes affect the appearance of an image. The resulting effect of a blend mode might be considerably different, depending on the color of the underlying image and the type of blend mode you apply.

Original image	*Layer*	*Darken*
Multiply	*Lighten*	*Screen*
Overlay	*Hard Light*	*Add*
Subtract	*Difference*	*Invert*

Apply a blend mode

To apply blends to selected movie clips, use the Property inspector.

Note:

You cannot apply different blend modes to different graphic symbols because multiple graphic symbols are merged as a single shape when you publish the SWF file.

1. Select the movie clip instance (on the Stage) to apply a blend mode to.
2. To adjust the color and transparency of the movie clip instance, use the Color pop-up menu in the Properties panel.
3. Select a blend mode for movie clips from the Blend pop-up menu in the Properties panel. The blend mode is applied to the selected movie clip instance.
4. Verify that the blend mode you selected is appropriate to the effect you're trying to achieve.

Experiment with both the color and transparency settings of the movie clip and the different blend modes to achieve the desired effect.

3D graphics

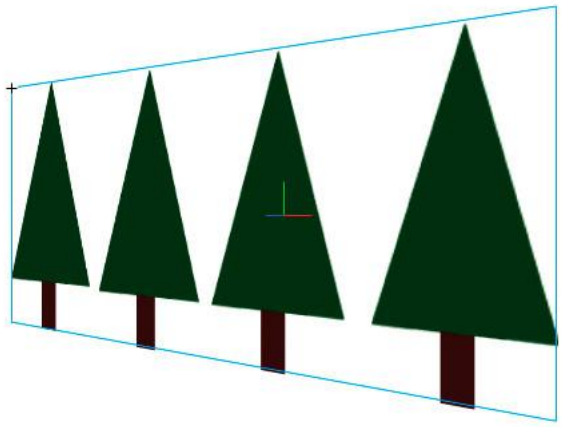
About 3D graphics in Animate

Animate CC (formerly Flash Professional CC) allows you to create 3D effects by moving and rotating movie clips in 3D space on the Stage. Animate represents 3D space by including a z axis in the properties of each movie clip instance. You add 3D perspective effects to movie clip instances by moving them along their x axis or rotating them around their x or y axis using the 3D Translation and 3D Rotation tools. In 3D terminology, moving an object in 3D space is called a translation and rotating an object in 3D space is called a transformation. Once you have applied either of these effects to a movie clip, Animate considers it a 3D movie clip and a colored axes indicator appears overlaid onto the movie clip whenever it is selected.

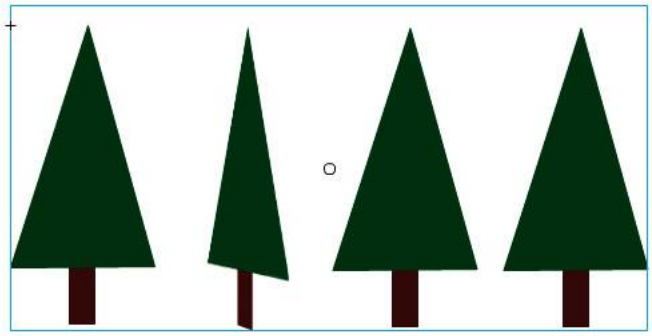
To make an object appear nearer or further away from the viewer, move it along its z axis with the 3D Translation tool or the Property inspector. To give the impression of an object that is at an angle to the viewer, rotate the movie clip around its z axis with the 3D Rotation tool. By using these tools in combination, you can create realistic perspective effects.

Both the 3D Translation and the 3D Rotation tools allow you to manipulate objects in global or local 3D space. Global 3D space is the Stage space. Global transforms and translations are relative to the Stage. Local 3D space is the movie clip space. Local transforms and translations are relative to the movie clip space. For example, if you have a movie clip containing several nested movie clips, local 3D transforms of the nested movie clips are relative to the drawing area inside the container movie clip. The default mode of the 3D Translation and Rotation tools is global. To use them in local mode, click the Global toggle button in the Options section of the Tools panel.

By using the 3D properties of movie clip instances in your FLA file, you can create a variety of graphic effects without duplicating movie clips in the library. However, when you edit a movie clip from the library, 3D transforms and translations that have been applied are not visible. When editing the contents of a movie clip, only 3D transforms of nested movie clips are visible.



The Stage with a movie clip rotated in global 3D space.



The Stage with a movie clip containing a nested movie clip rotated in local 3D space.

Note:

Once a 3D transform is added to a movie clip instance, its parent movie clip symbol cannot be edited in Edit in Place mode.

If you have 3D objects on the Stage, you can add certain 3D effects to all of those objects as a group by adjusting the Perspective Angle and Vanishing Point properties of your FLA file. The Perspective Angle property has the effect of zooming the view of the Stage. The Vanishing Point property has the effect of panning the 3D objects on the Stage. These settings only affect the appearance of movie clips that have a 3D transform or translation applied to them.

In the Animate authoring tool, you can control only one viewpoint, or camera. The camera view of your FLA file is the same as the Stage view. Each FLA file has only one perspective Angle and Vanishing Point setting.

To use the 3D capabilities of Animate' , the publish settings of your FLA file must be set to Flash Player 10 and ActionScript 3.0. Only movie clip instances can be rotated or translated along the z axis. Some 3D capabilities are available through ActionScript that are not available directly in the Animate user interface, such as multiple Vanishing Points and separate cameras for each movie clip. Using ActionScript 3.0, you can apply 3D properties to objects such as text, FLV Playback components, and buttons, in addition to movie clips.

Note:

The 3D tools cannot be used on objects on mask layers and layers containing 3D objects cannot be used as mask layers. For more information about mask layers, see .

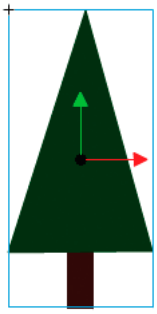
Move objects in 3D space

You move movie clip instances in 3D space with the 3D Translation tool . When you select a movie clip with the tool, its three axes, X, Y, and Z, appear on the Stage on top of the object. The x axis is red, the y axis is green, and the z axis is blue.

The default mode of the 3D Translation tool is global. Moving an object in global 3D space is the same as moving it relative to the Stage. Moving an object in local 3D space is the same as moving it relative to its parent movie clip if it has one. To toggle the 3D Translation tool between global and local modes, click the Global toggle button in the Options section of the Tools panel while the 3D Translation tool is selected. You can temporarily toggle the mode from global to local by pressing the D key while dragging with the 3D Translation tool.

The 3D Translation and Rotation tools occupy the same space in the Tools panel. Click and hold the active 3D tool icon in the Tools panel to select the currently inactive 3D tool.

By default, selected objects that have 3D translation applied appear with a 3D axis overlay on the Stage. You can turn off this overlay in the General section of Animate Preferences.



The 3D Translation tool overlay.

Note:

Changing the z axis position of a 3D movie clip will cause the movie clip to appear to change its x and y position as well. This is because movement along the z axis follows the invisible perspective lines which radiate from the 3D vanishing point (set in the 3D symbol instance Property inspector) to the edges of the Stage.

Move a single object in 3D space

1 Select the 3D Translation tool in the Tools panel (or press the G key to select it).

2 Set the tool to Local or Global mode.

Be sure that the tool is in the mode you want mode by checking the Global toggle button in the Options section of the Tools panel. Click the button or press the D key to toggle the mode.

3 Select a movie clip with the 3D Translation tool .

4 To move the object by dragging with the tool, move the pointer over the x-, y-, or z-axis controls. The pointer changes when over any of the controls.

The x- and y-axis controls are the arrow tips on each axis. Drag one of these controls in the direction of its arrow to move the object along the selected axis. The z-axis control is the black dot at the center of the movie clip. Drag the z-axis control up or down to move the object on the z axis.

5 To move the object using the Property inspector, enter a value for X, Y, or Z in the 3D Position and View section of the Property inspector.

When you move an object on the z axis, its apparent size changes. The apparent size appears in the Property inspector as the Width and Height values in the 3D Position and View section of the Property inspector. These values are read-only.

Move a multiple-object selection in 3D space

When you select multiple movie clips, you can move one of the selected objects with the 3D Translation tool and the others move in the same way.

- To move each object in the group in the same way in global 3D space, set the 3D Translation tool to global mode and then drag one of the objects with the axis controls. Shift-double-click one of the selected objects to move the axis controls to that object.
- To move each object in the group in the same way in local 3D space, set the 3D Translation tool to local mode and then drag one of the objects with the axis controls. Shift-double-click one of the selected objects to move the axis controls to that object.

You can also move the axis controls to the center of the multiple selection by double-clicking the z-axis control. Shift-double-click one of the selected objects to move the axis controls to that object.

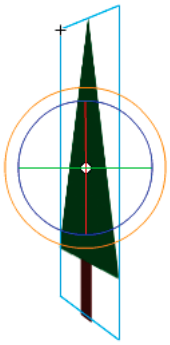
Rotate objects in 3D space

You rotate movie clip instances in 3D space with the 3D Rotation tool . A 3D rotation control appears on top of selected objects on the Stage. The X control is red, the Y control is green, and the Z control is blue. Use the orange free rotate control to rotate around the X and Y axes at the same time.

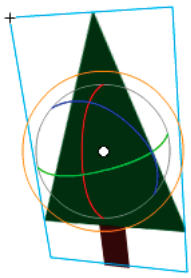
The default mode of the 3D Rotation tool is global. Rotating an object in global 3D space is the same as moving it relative to the Stage. Rotating an object in local 3D space is the same as moving it relative to its parent movie clip if it has one. To toggle the 3D Rotation tool between global and local modes, click the Global toggle button in the Options section of the Tools panel while the 3D Rotation tool is selected. You can temporarily toggle the mode from global to local by pressing the D key while dragging with the 3D Rotation tool.

The 3D Rotation and Translation tools occupy the same space in the Tools panel. Click and hold the active 3D tool icon in the Tools panel to select the currently inactive 3D tool.

By default, selected objects that have 3D rotation applied appear with a 3D axis overlay on the Stage. You can turn off this overlay in the General section of Animate Preferences.



The Global 3D Rotation tool overlay.



The Local 3D Rotation tool overlay.

Rotate a single object in 3D space

1 Select the 3D Rotation tool in the Tools panel (or press the W key).

Verify that the tool is in the mode that you want by checking the Global toggle button in the Options section of the Tools panel. Click the button or press the D key to toggle the mode between global and local.

2 Select a movie clip on the Stage.

The 3D Rotation controls appear overlaid on selected object. If the controls appear in a different location, double-click the control center point to move it to the selected object.

3 Place the pointer over one of the four rotation axis controls.

The pointer changes when over one of the four controls.

4 Drag one of the axis controls to rotate around that axis, or the free rotate control (outer orange circle) to rotate x and y simultaneously.

Drag the X axis control left or right to rotate around the x axis. Drag the y-axis control up or down to rotate around the y axis. Drag the z-axis control in a circular motion to rotate around the z axis.

5 To relocate the rotation control center point relative to the movie clip, drag the center point. To constrain the movement of the center point to 45° increments, press the Shift key while dragging.

Moving the rotation control center point lets you control the effect of the rotation on the object and its appearance. Double-click the center point to move it back to the center of the selected movie clip.

The location of the rotation control center point for the selected object appears in the Transform panel as the 3D Center Point property. You can modify the location of the center point in the Transform panel.

Rotate a multiple-object selection in 3D space

1 Select the 3D Rotation tool in the Tools panel (or press the W key).

Verify that the tool is in the mode that you want by checking the Global toggle button in the Options section of the Tools panel. Click the button or press the D key to toggle the mode between global and local.

2 Select multiple movie clips on the Stage.

The 3D Rotation controls appear overlaid on the most recently selected object.

3 Place the pointer over one of the four rotation axis controls.

The pointer changes when over one of the four controls.

4 Drag one of the axis controls to rotate around that axis, or the free rotate control (outer orange circle) to rotate X and Y simultaneously.

Drag the x-axis control left or right to rotate around the x axis. Drag the y-axis control up or down to rotate around the y axis. Drag the z-axis control in a circular motion to rotate around the z axis.

All of the selected movie clips rotate around the 3D center point which appears at the center of the rotation controls.

5 To relocate the 3D rotation control center point, do one of the following:

- To move the center point to an arbitrary location, drag the center point.
- To move the center point to the center of one of the selected movie clips, Shift-double-click the movie clip.
- To move the center point to the center of the group of selected movie clips, double-click the center point.

Changing the location of the 3D rotation center point lets you control the effect of the rotation on the objects.

The location of the rotation control center point for the selected object appears in the Transform panel as the 3D Center Point. You can modify the location of the center point in the Transform panel.

Rotate a selection with the Transform panel

1 Open the Transform panel (Window > Transform).

2 Select one or more movie clips on the Stage.

3 In the Transform panel, enter the desired values in the 3D Rotation X, Y, and Z fields to rotate the selection. These fields contain hot text, so you can drag the values to change them.

Note:

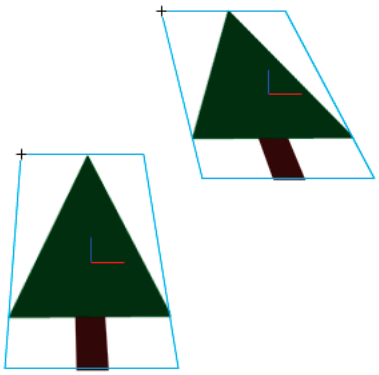
The 3D rotation takes place in global or local 3D space, depending on the current mode of the 3D Rotation tool in the Tools panel.

4 To move the 3D rotation point, enter the desired values in the 3D Center Point X, Y, and Z fields.

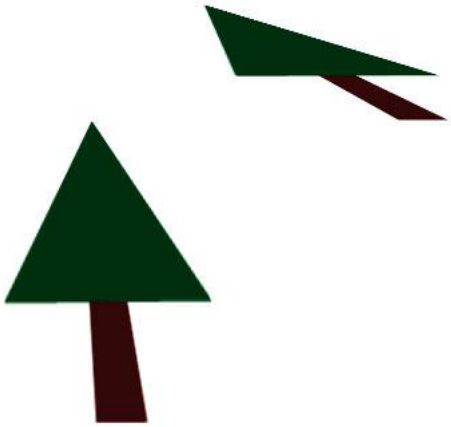
Adjusting the Perspective Angle

The Perspective Angle property of a FLA file controls the apparent angle of view of 3D movie clips on the Stage.

Increasing or decreasing the Perspective Angle affects the apparent size of 3D movie clips and their location relative to the edges of the Stage. By increasing the Perspective Angle, you make 3D objects appear closer to the viewer. By decreasing the Perspective Angle property, you make 3D objects appear further away. The effect is like zooming in or out with a camera lens which changes the angle of view through the lens.



The Stage with a Perspective Angle of 55.



The Stage with a Perspective Angle of 110.

The Perspective Angle property affects all movie clips with 3D translation or rotation applied to them. The Perspective Angle does not affect other movie clips. The default Perspective Angle is 55° of view, like a normal camera lens. The range of values is from 1° to 180°.

To view or set the Perspective Angle in the Property inspector, a 3D movie clip must be selected on Stage. Changes to the Perspective Angle are visible on the Stage immediately.

The Perspective Angle changes automatically when you change the Stage size so that the appearance of 3D objects does not change. You can turn off this behavior in the Document Properties dialog box.

To set the Perspective Angle:

1 On the Stage, select a movie clip instance that has 3D rotation or translation applied to it.

2 In the Property inspector, enter a new value in the Perspective Angle field, or drag the hot text to change the value.

Adjust the Vanishing Point

The Vanishing Point property of a FLA file controls the orientation of the z axis of 3D movie clips on the Stage. The z axes of all 3D movie clips in a FLA file recede toward the Vanishing Point. By relocating the Vanishing Point, you change the direction that an object moves when translated along its z axis. By adjusting the position of the Vanishing Point, you can precisely control the appearance of 3D objects and animation on the Stage.

For example, if you locate the Vanishing Point at the upper-left corner of the Stage (0, 0), then increasing the value of the Z property of a movie clip moves the movie clip away from the viewer and toward the upper-left corner of the Stage.

Because the Vanishing Point affects all 3D movie clips, changing it also changes the position of all movie clips that have a z-axis translation applied.

The Vanishing Point is a document property that affects all movie clips that have z-axis translation or rotation applied to them. The Vanishing Point does not affect other movie clips. The default location of the Vanishing Point is the center of the Stage.

To view or set the Vanishing Point in the Property inspector, a 3D movie clip must be selected on Stage. Changes to the Vanishing Point are visible on the Stage immediately.

To set the Vanishing Point:

1 On the Stage, select a movie clip that has 3D rotation or translation applied to it.

2 In the Property inspector, enter a new value in the Vanishing Point field, or drag the hot text to change the value. Guides indicating the location of the Vanishing Point appear on the Stage while dragging the hot text.

3 To move the Vanishing Point back to the center of the Stage, click the Reset button in the Property inspector.

Note:

If you resize the Stage, the Vanishing Point does not update automatically. To maintain the 3D look created by a specific placement of the Vanishing Point, you will need to reposition the Vanishing Point relative to the new Stage size.

Exporting Sounds

About compressing sounds for export

In Adobe Animate CC (formerly Flash Professional CC), you can select compression options for individual event sounds and export the sounds with those settings. You can also select compression options for individual stream sounds. However, all stream sounds in a document are exported as a single stream file, using the highest setting of all those applied to individual stream sounds. This includes stream sounds in video objects.

If you select global compression settings for event sounds or stream sounds in the Publish Settings dialog box, these settings are applied to individual event sounds or all stream sounds if you do not select compression settings for the sounds in the Sound Properties dialog box.

You can also override export settings specified in the Sound Properties dialog box by selecting Override Sound Settings in the Publish Settings dialog box. This option is useful if you want to create a larger high-fidelity audio file for local use and a smaller low-fidelity version for the web.

The sampling rate and degree of compression make a significant difference in the quality and size of sounds in exported SWF files. The more you compress a sound and the lower the sampling rate, the smaller the size and the lower the quality. You should experiment to find the optimal balance between sound quality and file size.

When working with imported mp3 files, you can export the files in mp3 format using the same settings that the files had when imported.

Note:

In Windows, you can also export all the sounds from a document as a WAV file using File > Export > Export Movie.

Compress a sound for export

1. Do one of the following:
   - Double-click the sound's icon in the Library panel.
   - Right-click (Windows) or Control-click (Macintosh) a sound file in the Library panel and select Properties from the context menu.
   - Select a sound in the Library panel and select Properties from the Panel menu in the upper-right corner of the panel.
   - Select a sound in the Library panel and click the Properties button at the bottom of the Library panel.
2. If the sound file has been edited externally, click Update.
3. For Compression, select Default, ADPCM, mp3, Raw, or Speech.

   The Default compression option uses the global compression settings in the Publish Settings dialog box when you export your SWF file. If you select Default, no additional export settings are available.
4. Set export settings.
5. Click Test to play the sound once. Click Stop if you want to stop testing the sound before it finishes playing.
6. Adjust export settings if necessary until the desired sound quality is achieved, and then click OK.

ADPCM and Raw compression options

ADPCM compression sets compression for 8- or 16-bit sound data. Use the ADPCM setting when you export short event sounds such as button clicks.

Raw compression exports sounds with no sound compression.

Preprocessing Converts mixed stereo sounds to monaural (mono) when you select Convert Stereo To Mono (mono sounds are unaffected by this option).

Sample Rate Controls sound fidelity and file size. Lower rates decrease file size but can also degrade sound quality. Rate options are as follows:

note: Animate cannot increase the kHz rate of an imported sound above the rate at which it was imported.

5 kHz Barely acceptable for speech.

11 kHz The lowest recommended quality for a short segment of music and one-quarter the standard CD rate.

22 kHz A popular choice for web playback and half the standard CD rate.

44 kHz The standard CD audio rate.

ADPCM Bits (ADPCM only) Specifies the bit depth of the sound compression. Higher bit depths produce higher quality sound.

mp3 compression options

MP3 Compression Lets you export sounds with mp3 compression. Use mp3 when you are exporting longer stream sounds such as music sound tracks.

If you are exporting a file that was imported in mp3 format, you can export the file using the same settings the file had when it was imported.

Use Imported mp3 Quality Default setting. Deselect to select other mp3 compression settings. Select to export an imported mp3 file with the same settings the file had when it was imported.

Bit Rate Determines the bits per second in the exported sound file. Animate supports 8 through 160 Kbps CBR (constant bit rate). When you export music, set the bit rate to 16 Kbps or higher for best results.

Preprocessing Converts mixed stereo sounds to monaural (mono sounds are unaffected by this option).

***note**: The Preprocessing option is available only if you select a bit rate of 20 Kbps or higher.*

Quality Determines the compression speed and sound quality:

Fast Yields faster compression but lower sound quality.

Medium Yields somewhat slower compression but higher sound quality.

Best Yields the slowest compression and the highest sound quality.

Speech compression option

Speech compression exports sounds using a compression that is adapted to speech.***note**: Flash Lite 1.0 and Flash Lite 1.1 do not support the Speech compression option. For content targeting those player versions, use mp3, ADPCM, or Raw compression.*

Sample rate Controls sound fidelity and file size. A lower rate decreases file size but can also degrade sound quality. Select from the following options:

5 kHz Acceptable for speech.

11 kHz Recommended for speech.

22 kHz Acceptable for most types of music on the web.

44 kHz The standard CD audio rate. However, because compression is applied, the sound is not CD quality in the SWF file.

Guidelines for exporting sound in Animate documents

Besides sampling rate and compression, there are several ways to use sound efficiently in a document and keep file size small:

- Set the in and out points to prevent silent areas from being stored in the Animate file and to reduce the size of the sound data in the file.

- Get more out of the same sounds by applying different effects for sounds (such as volume envelopes, looping, and in/out points) at different keyframes. You can get a number of sound effects by using only one sound file.
- Loop short sounds for background music.
- Do not set streaming sound to loop.
- When exporting audio in embedded video clips, remember that the audio is exported using the global streaming settings selected in the Publish Settings dialog box.
- Use stream synchronization to keep the animation synchronized to your sound track when you preview your animation in the editor. If your computer is not fast enough to draw the animation frames so that they keep up with your sound track, Animate skips frames.
- When exporting QuickTime movies, use as many sounds and channels as you want without worrying about file size. The sounds are combined into a single sound track when you export as a QuickTime file. The number of sounds you use has no effect on the final file size.

Work with the libraries in Animate CC

Work with libraries

The library in an Animate document stores media assets that you create in the Animate authoring environment or import to use in the document. You can create vector artwork or text directly in Animate; import vector artwork, bitmaps, video, and sound; and create symbols. A symbol is a graphic, a button, a movie clip, or text that you create once and can reuse multiple times. You can also use ActionScript to add media content to a document dynamically.

The library also contains any components that you have added to your document. Components can be either compiled clips or MovieClip based components.

You can open the library of any Animate document while you are working in Animate, to make the library items from that file available for the current document. You can search the symbols in the library by their names or their ActionScript linkage names.

You can create permanent libraries in your Animate application that are available whenever you start Animate. Animate also includes several sample libraries containing buttons, graphics, movie clips, and sounds.

You can export library assets as a SWF file to a URL to create a runtime-shared library. This lets you link to the library assets from Animate documents that import symbols using runtime sharing.

The Library panel (Window > Library) displays a scroll list with the names of all items in the library, which lets you view and organize these elements as you work. An icon next to an item's name in the Library panel indicates the item's file type.

Note:

Dragging objects from Stage to the Library panel to convert to a Symbol is deprecated, and will not be functional with Animate CC.

Dragging objects on to the Stage across two undocked documents is deprecated, and will not be functional with Animate CC.

Open a library in another Animate file

1 From the current document, select File > Import > Open External Library.

2 Navigate to the Animate file whose library you want to open and click Open.

The selected file's library opens in the current document, with the filename at the top of the Library panel. To use items from the selected file's library in the current document, drag the items to the current document's Library panel or to the Stage.

Resize the Library panel

? Do one of the following:

- Drag the lower-right corner of the panel.
- Click the Wide State button to enlarge the Library panel so it shows all the columns.
- Click the Narrow State button to reduce the width of the Library panel.

Change the width of columns

? Position the pointer between column headers and drag to resize.

Work with folders in the Library panel

You can organize items in the Library panel using folders. When you create a new symbol, it is stored in the selected folder. If no folder is selected, the symbol is stored at the root of the library.

Animate also imports animated GIF files in an organized way by placing them in a separate folder under the library root folder and naming all the associated bitmaps based on their sequence.

Create a new folder

? Click the New Folder button at the bottom of the Library panel.

Open or close a folder

? Double-click the folder, or Select the folder and select Expand Folder or Collapse Folder from the Panel menu for the Library panel.

Open or close all folders

? Select Expand All Folders or Collapse All Folders from the Panel menu for the Library panel.

Move an item between folders

? Drag the item from one folder to another.

If an item with the same name exists in the new location, Animate prompts you to replace it with the item you are moving.

Sort items in the Library panel

Columns in the Library panel list the name of an item, its type, the number of times it's used in the file, its linkage status and identifier (if the item is associated with a shared library or is exported for ActionScript), and the date on which it was last modified.

You can sort items in the Library panel alphanumerically by any column. Items are sorted within folders.

Animate libary organizes the imported animated GIF files in a separate folder under the library root folder and names all the associated bitmaps based on their sequence.

? Click the column header to sort by that column. Click the triangle button to the right of the column headers to reverse the sort order.

Conflicts between library assets

If you import or copy a library asset into a document that already contains a different asset of the same name, choose whether to replace the existing item with the new item. This option is available with all the methods for importing or copying library assets.

The Resolve Library Items dialog box appears when you attempt to place items that conflict with existing items in a document. A conflict exists when you copy an item from a source document that already exists in the destination document and the items have different modification dates. Avoid naming conflicts by organizing your assets inside folders in your document's library. The dialog box also appears when you paste a symbol or component into your document's Stage and you already have a copy of the symbol or component that has a different modification date from the one you're pasting.

If you choose not to replace the existing items, Animate attempts to use the existing item instead of the conflicting item that you are pasting. For example, if you copy a symbol named Symbol 1 and paste the copy into the Stage of a document that already contains a symbol named Symbol 1, Animate creates an instance of the existing Symbol 1.

If you choose to replace the existing items, Animate replaces the existing items (and all their instances) with the new items of the same name. If you cancel the Import or Copy operation, the operation is canceled for all items (not just those items that conflict in the destination document).

Only identical library item types may be replaced with each other. That is, you cannot replace a sound named Test with a bitmap named Test. In such cases, the new items are added to the library with the word Copy appended to the name.

Note:

Replacing library items using this method is not reversible. Save a backup of your FLA file before you perform complex paste operations that are resolved by replacing conflicting library items.

If the Resolve Library Conflict dialog box appears when you are importing or copying library assets into a document, resolve the naming conflict.

Resolve naming conflicts between library assets

? Do one of the following in the Resolve Library Conflict dialog box:

- To preserve the existing assets in the destination document, click Don't Replace Existing Items.
- To replace the existing assets and their instances with the new items of the same name, click Replace Existing Items.

Work with library items

When you select an item in the Library panel, a thumbnail preview of the item appears at the top of the Library panel. If the selected item is animated or is a sound file, you can use the Play button in the library preview window or the Controller to preview the item.

Search library items by linkage name

You can search the library search panel for symbols by their names or their ActionScript linkage names.

- To search for a library item, type in the first few letters of the symbol name or the ActionScript linkage name of the library item. As you type, the list of matching symbols appears in the library panel.

Use a library item in the current document

? Drag the item from the Library panel onto the Stage.

The item is added to the current layer.

Convert an object on the Stage to a symbol in the library

? Select the object on stage, right click, and select Convert to Symbol.

Use a library item from the current document in another document

? Drag the item from the Library panel or Stage into the Library panel or Stage of another document.

Copy library items from a different document

1. Select the document that contains the library items.
2. Select the library items in the Library panel.
3. Select Edit > Copy.
4. Select the document that you want to copy the library items to.
5. Select that document's Library panel.
6. Select Edit > Paste.

Edit a library item

1. Select the item in the Library panel.
2. Select one of the following from the Panel menu for the Library panel:
   - To edit an item in Animate, select Edit.
   - To edit an item in another application, select Edit With and then select an external application.

Note:

When starting a supported external editor, Animate opens the original imported document.

Rename a library item

Changing the library item name of an imported file does not change the filename.

1. Do one of the following:
   - Double-click the item's name.
   - Select the item and select Rename from the Panel menu for the Library panel.
   - Right-click (Windows) or Control-click (Macintosh) the item and select Rename from the context menu.
2. Enter the new name in the box.

Delete a library item

When you delete an item from the library, all instances or occurrences of that item in the document are also deleted.

? Select the item and click the trash can icon at the bottom of the Library panel.

Find unused library items

To organize your document, you can find unused library items and delete them.

Note:

It is not necessary to delete unused library items to reduce an Animate document's file size, because unused library items are not included in the SWF file. However, items linked for export are included in the SWF file.

? Do one of the following:

- Select Unused Items from the Panel menu for the Library panel.
- Sort library items by the Use Count column, which indicates whether an item is in use.

Update imported files in the library

If you use an external editor to modify files that you have imported into Animate, such as bitmaps or sound files, you can update the files in Animate without reimporting them. You can also update symbols that you have imported from external Animate documents. Updating an imported file replaces its contents with the contents of the external file.

Note: You can locate the imported animated GIF files organized in a separate folder under the library root folder with all the associated bitmaps named based on their sequence.

1 Select the imported file in the Library panel.

2 Select Update from the Panel menu for the Library panel.

Copy library assets between documents

You can copy library assets from a source document into a destination document in a variety of ways. You can also share symbols between documents as shared library assets during authoring or at runtime.

If you attempt to copy assets that have the same name as existing assets in the destination document, the Resolve Library Conflicts dialog box lets you choose whether to overwrite the existing assets or to preserve the existing assets and add the new assets with modified names. Organize library assets in folders to minimize name conflicts when copying assets between documents.

Copy a library asset by copying and pasting

1 Select the asset on the Stage in the source document.

2 Select Edit > Copy.

3 Make the destination document the active document.

4 To paste the asset in the center of the visible pasteboard, place the pointer on the Stage and select Edit > Paste In Center. To place the asset in the same location as in the source document, select Edit > Paste In Place.

Copy a library asset by dragging

? With the destination document open, select the asset in the Library panel in the source document and drag the asset into the Library panel in the destination document.

Copy a library asset by opening the source document library in the destination document

1 With the destination document active, select File > Import > Open External Library.

2 Select the source document, and click Open.

3 Drag an asset from the source document library onto the Stage or into the library of the destination document.

Drawing preferences

Set drawing settings to specify snapping, smoothing, and straightening behaviors. Change the tolerance setting for each option, and turn each option off or on. Tolerance settings are relative, depending on the resolution of your computer screen and the current magnification of the scene. By default, each option is on and set to Normal tolerance.

Drawing settings

1 Select Edit > Preferences (Windows) or Animate > Preferences (Macintosh) and select Drawing.

2 Under the Drawing category, select from the following options:

Pen tool Lets you set options for the Pen tool. Select Show Pen Preview to display a preview line from the last clicked point to the current location of the pointer. Select Show Solid Points to display control points as small filled squares instead of unfilled squares. Select Show Precise Cursors to display a crosshair cursor instead of the Pen tool icon when using the Pen tool. This option lets you see the exact target of clicks more easily.

Connect Lines Determines how close the end of a line being drawn must be to an existing line segment before the end point snaps to the nearest point on the other line. This setting also controls horizontal and vertical line recognition—that is, how nearly horizontal or vertical a line must be drawn before Animate makes it exactly horizontal or vertical. When Snap To Objects is turned on, this setting controls how close objects must be to snap to one another.

Smooth Curves Specifies the amount of smoothing applied to curved lines drawn with the Pencil tool when the drawing mode is set to Straighten or Smooth. (Smoother curves are easier to reshape, whereas rougher curves match the original line strokes more closely.)

***note**: To further smooth existing curved segments, use Modify > Shape > Smooth and Modify > Shape > Optimize.*

Recognize Lines Defines how nearly straight a line segment drawn with the Pencil tool must be before Animate recognizes it as a straight line and makes it perfectly straight. If Recognize Lines is off while you draw, straighten lines later by selecting one or more line segments and selecting Modify > Shape > Straighten.

Recognize Shapes Controls how precisely to draw circles, ovals, squares, rectangles, and 90° and 180° arcs for them to be recognized as geometric shapes and redrawn accurately. The options are Off, Strict, Normal, and Tolerant. Strict requires that the shape be drawn very close to straight; Tolerant specifies that the shape can be somewhat rough, and Animate redraws the shape. If Recognize Shapes is off while you draw, straighten lines later by selecting one or more shapes (for example, connected line segments) and selecting Modify > Shape > Straighten.

Click Accuracy Specifies how close to an item the pointer must be before Animate recognizes the item.

Selection, Subselection, and Lasso tool contact options

Specify the Selection, Subselection, and Lasso tool contact-sensitivity options when you create shapes using Object Drawing mode. By default, objects are only selected when the tool's marquee rectangle completely surrounds the object. Deselecting this option selects entire objects when they are only partially enclosed by the selection marquee of the Selection, Subselection, or Lasso tools.

1 Select Edit > Preferences (Windows) or Animate > Preferences (Macintosh).

2 In the General category, do one of the following:

- To select only objects and points that are completely enclosed by the selection marquee, deselect Contact-Sensitive Selection and Lasso tools. Points that lie within the selection area are still selected.
- To select objects or groups that are only partially enclosed by the selection marquee, select Contact-Sensitive Selection and Lasso tools.

  ***note**: The Subselection tools use the same contact-sensitive setting.*

How to embed fonts for consistent text appearance

When your published SWF files play on computers across the Internet, there is no guarantee that the fonts you used are available on those machines. To ensure that your text maintains the appearance you intended, you can embed entire fonts or specific subsets of characters from a font. By embedding the characters in your published SWF file, you make the font available to the SWF file regardless of the computer that plays the file. Once a font is embedded, you can use it anywhere in your published SWF file.

Animate automatically embeds all characters used by any text objects that contain text. Creating an embedded font symbol yourself allows your text objects to use additional characters, such as when accepting user input at runtime or when editing text with ActionScript. Embedded fonts are not necessary for text objects that have the Anti-alias property set to Use Device Fonts. You specify which fonts you want embedded in your FLA file, and Animate embeds the fonts when you publish a SWF file.

There are 4 common situations in which to ensure correct text appearance by embedding fonts in a SWF file:

- When creating text objects in your FLA file that are part of a design that requires consistent text appearance.
- When you are using an anti-alias option other than Use Device Fonts, you must embed the fonts or text may disapppear or appear incorrectly.
- When generating text dynamically with ActionScript in your FLA file.
- When creating dynamic text with ActionScript, you must specify in ActionScript which font to use.
- When your SWF file contains text objects and may be loaded by another SWF file that does not have the required fonts embedded.

The Font Embedding dialog box allows you to:

- Manage all embedded fonts in one place.
- Create font symbols for each embedded font.
- Select custom ranges of embedded characters for a font as well as pre-defined ranges.
- Work with both Text Layout Framework (TLF) text and Classic text in the same file and use embedded fonts with each. Note that TLF text is unavailable with Animate CC. For more information, see Opening CS6 file with Animate CC.

To embed characters from a font in a SWF file:

1 With your FLA file open in Animate, open the Font Embedding dialog box by doing one of the following:

- Choose Text > Font Embedding.
- From the Library panel options menu, choose Add Font.
- Right-click in empty space in the Library panel tree view, and choose New Font.
- In the Text Property inspector, click on the Embed button.

2 If your font is not already selected in the Font Embedding dialog box, click the Add (+) button to add a new embedded font to your FLA file.

   When you open the Font Embedding dialog box from the Library or the Text Property inspector, a font item appears automatically in the dialog box.

3 In the Options tab, select the Family and Style of the font you want to embed.

   If you opened the Font Embedding dialog box from the Text Property inspector or from the Library panel, the font used by the current selection appears automatically in the dialog box.

4 In the Character Ranges section, select the character ranges you want to embed. The more characters you embed, the larger your published SWF file will be.

5 If you want to embed any additional specific characters, enter them in the "Also include these characters" field.

6 To enable the embedded font symbol to be accessed with ActionScript code, select Export for ActionScript in the ActionScript tab.

7 If you selected Export for ActionScript, select an outline format also. For TLF text containers, select TLF (DF4) as the Outline Format. For Classic text containers, select Classic (DF3).

   You must create separate embedded font symbols for use in TLF and Classic text containers. The TLF (DF4) outline format is not available for PostScript Type 1 fonts. TLF (DF4) requires Flash Player version 10 or later.

8 If you want to use the font symbol as a shared asset, select options in the Sharing section of the ActionScript tab. For more information about using shared assets, see Sharing library assets across files.

To edit the parameters of an embedded font symbol:

1 Do one of the following:

- Right-click the font symbol in the Library and choose Properties.
- Select a text container on the Stage and click the Embed button in the Character section of the Property inspector.
- Select the font symbol in the Library and choose Edit Properties from the panel options menu.
- Double-click the icon of the font symbol in the Library.
- Choose Text > Font Embedding, and then select the font symbol you want to edit in the tree view on the left of the dialog.

2 Make changes in the Font Embedding dialog box and click OK.

The tree view in the Font Embedding dialog box displays all font symbols in the current FLA file, organized by font family. You can edit any or all of the fonts while the dialog is open, and the changes will be committed when you press the OK button.

Scaling and caching symbols

Scaling content on the Stage

You can scale items on the stage in these ways:

- Scale individual symbol instances with the Free Transform tool, Properties panel, or Transform panel.
- Scale individual symbol instances with 9-slice scaling and the tools and panels listed above.

- Scaling the entire contents of the Stage when resizing the stage.

Scale an individual symbol instance

1. Select the symbol instance on the Stage.
2. Do one of the following:
   - Select the Free Transform tool in the Tools panel and then drag the corners or edges of the instance to resize it.
   - Open the Properties panel (Window > Properties) and edit the Height and Width properties of the instance.
   - Open the Transform panel (Window > Transform) and edit the Scale Width and Scale Height properties of the instance.

Scale all content when resizing the Stage

1. Choose Modify > Document.
2. In the Document Settings dialog box, enter new values for the Height and Width dimensions of the document. This is the Stage size.
3. Select the Scale Content with Stage option. Click OK.

   Scaling is applied to all content in all frames.

Tutorials and videos

About 9-slice scaling and movie clip symbols

9-slice scaling allows you to specify how scaling is applied to specific areas of a movie clip. With 9-slice scaling, you can ensure that the movie clip looks correct when scaled. With normal scaling, Animate rofessional scales all parts of a movie clip equally, and in both the horizontal and vertical dimensions. For many movie clips, this equal scaling can make the clip's graphics look strange, especially at the corners and edges of rectangular movie clips. This is often true of movie clips used as user interface elements, such as buttons.

The movie clip is visually divided into nine sections with a grid-like overlay, and each of the nine areas is scaled independently. To maintain the visual integrity of the movie clip, corners are not scaled, while the remaining areas of the image are scaled (as opposed to being stretched) larger or smaller, as needed.

When a movie clip symbol has 9-slice scaling applied, it appears in the Library panel preview with the guides displayed. If Enable Live Preview is turned on (Control > Enable Live Preview) when you scale instances of the movie clip on the Stage, you see the 9-slice scaling applied on the Stage.

note: The Live Preview setting cannot be used with an ActionScript 3.0 document.

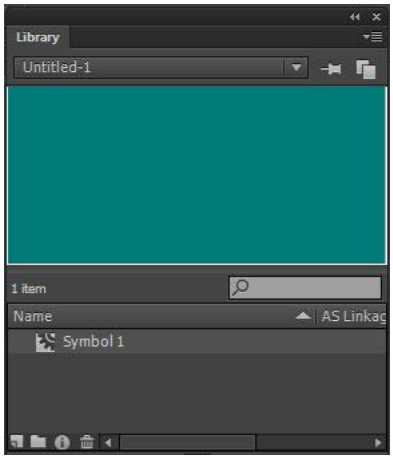
Note:

9-slice scaling cannot be applied to Graphic or Button symbols. Bitmaps inside 9-slice enabled movie clips are scaled normally, without 9-slice distortion, while the other movie clip contents are scaled according to the 9-slice guides.

Note:

9-slice scaling is sometimes also referred to as "scale 9."

A 9-slice-enabled movie clip can contain nested objects within it, but only certain types of objects inside the movie clip properly scale in the 9-slice manner. To make a movie clip with internal objects that also adhere to 9-slice scaling when the movie clip is scaled, those nested objects must be shapes, drawing objects, groups, or graphic symbols.



A 9-slice-enabled symbol in the Library panel and scaled on the Stage

Edit movie clip symbols with 9-slice scaling

By default, slice guides are placed at 25% (or one-fourth) of the symbol's width and height from the edge of the symbol. In symbol-editing mode, the slice guides appear as dotted lines superimposed on the symbol. The slice guides don't snap when you drag them on the pasteboard. The guides do not appear when the symbol is on the Stage.

You cannot edit 9-slice-enabled symbols in place on the Stage. You must edit them in symbol-editing mode.

note: Instances made from a 9-slice-enabled movie clip symbol can be transformed, but should not be edited. Editing these instances can have unpredictable results.

Enable 9-slice scaling for an existing movie clip symbol

1. With the source document open, select Window > Library.
2. Select a movie clip, button, or graphic symbol in the Library panel.
3. Select Properties from the Library Panel menu.
4. Select Enable Guides for 9-slice Scaling.

Edit a 9-slice-enabled movie clip symbol

1. Enter symbol-editing mode by doing one of the following:
   - Select an instance of the symbol on the Stage and right-click (Windows) or Control-click (Macintosh), and select Edit.
   - Select the symbol in the Library panel and right-click (Windows) or Control-click (Macintosh), and select Edit.
   - Double-click the symbol in the Library panel.
2. To move the horizontal or vertical guides, drag and release a guide. The new position of the guide is updated in the Library preview for the symbol.

Improving rendering performance with bitmap caching

Runtime bitmap caching lets you optimize playback performance by specifying that a static movie clip (for example, a background image) or button symbol be cached as a bitmap at runtime. By default, Flash Player redraws each vector item on the Stage in every frame. Caching a movie clip or button symbol as a bitmap prevents Flash Player from having to continually redraw the item, because the image is a bitmap and its position on the Stage does not change. This provides a significant improvement in playback performance.

For example, when you create an animation with a complex background, create a movie clip containing all the items included in the background. Then select Cache as Bitmap for the background movie clip in the Property inspector. During playback, the background is rendered as a bitmap stored at the current screen depth. Flash Player draws the bitmap on the Stage quickly and only once, letting the animation play faster and more smoothly.

Without bitmap caching, the animation might play back too slowly.

Bitmap caching lets you use a movie clip and freeze it in place automatically. If a region changes, vector data updates the bitmap cache. This process minimizes the number of redraws that Flash Player must perform, and provides smoother, faster playback performance.

Only use runtime bitmap caching on static, complex movie clips in which the position, but not the content, of the movie clip changes on each frame in an animation. The playback or runtime performance improvement from using runtime bitmap caching is only noticeable on complex-content movie clips. Runtime bitmap caching with simple movie clips does not enhance performance.

Guy Watson has written a detailed article about using bitmap caching in the Animate Developer Center titled Using Bitmap Caching in Animate.

Note:

You can only use the Use Runtime Bitmap Caching option for movie clip and button symbols.

Under the following circumstances, a movie clip does not use a bitmap (even if Use Runtime Bitmap Caching is selected) but instead renders the movie clip or button symbol by using vector data:

- The bitmap is too large (greater than 2880 pixels in either direction).
- Flash Player fails to allocate memory for the bitmap (producing an out-of-memory error).

Specify bitmap caching for a symbol instance

1. Select the movie clip or button symbol on the Stage.
2. In the Property inspector, select the Cache as Bitmap option or choose Cache as Bitmap from the Render menu.

Specify a background color for a cached symbol instance

When Bitmap Caching is turned on for a symbol instance, you can choose an opaque background color for the instance. By default the background is transparent.

1. Select the instance on the Stage.
2. In the Display section of the Properties panel, select opaque from the Bitmap Background menu.
3. Select a background color from the color picker.

Graphic filters

About filters

Filter overview

Filters (graphic effects) let you add enriching visual effects to text, buttons, and movie clips. A feature unique to Animate is that you can animate the filters you apply using motion tweens.

Animate blend modes let you create composite images. Compositing is the process of varying the transparency or color interaction of two or more overlapping objects. Blending modes also add a dimension of control to the opacity of objects and images. You can use Animate blending modes to create highlights or shadows that let details from an underlying image show through, or to colorize a desaturated image.

About animated filters

You can animate filters in the Timeline. Objects on separate keyframes joined by a tween have the parameters for corresponding filters tweened on intermediate frames. If a filter does not have a matching filter (a filter of the same type) at the opposite end of the tween, a matching filter is added automatically to ensure that the effect occurs at the end of the animation sequence.

To prevent motion tweens from functioning incorrectly if a filter is missing at one end of the tween, or if filters are applied in a different order at each end, Animate does the following:

- If you apply a motion tween to a movie clip with filters applied to it, when you insert a keyframe at the opposite end of the tween, the movie clip automatically has the same filters, with the same stacking order, on the last frame of the tween as it did at the beginning of the tween.
- If you place movie clips on two different frames with different filters applied to each, and you apply a motion tween between the frames, Animate first processes the movie clip with the most filters. Animate then compares the filters applied to the first movie clip against the filters that the second movie clip uses. If no matching filters are found in the second movie clip, Animate generates a dummy filter with no parameters and the color of the existing filters.
- If a motion tween exists between two keyframes and you add a filter to the object in one keyframe, Animate automatically adds a dummy filter to the movie clip when it reaches the keyframe at the other end of the tween.
- If a motion tween exists between two keyframes and you remove a filter from an object in one keyframe, Animate automatically removes the matching filter from the movie clip when it reaches the keyframe at the other end of the tween.
- If you set filter parameters inconsistently between the beginning and end of a motion tween, Animate applies the filter settings of the starting frame to the interpolated frames. Inconsistent settings occur when the following parameters are set differently between the beginning and end of the tween: knockout, inner shadow, inner glow, and type of gradient glow and gradient bevel.

  For example, if you create a motion tween using the drop shadow filter, and apply a drop shadow with a knockout on the first frame of the tween, and an inner shadow on the last frame of the tween, Animate corrects the inconsistent use of the filter in the motion tween. In this case, Animate applies the filter settings used on the first frame of the tween—a drop shadow with a knockout.

About filters and Flash Player performance

The type, number, and quality of the filters you apply to objects can affect the performance of SWF files as you play them. The more filters you apply to an object, the greater the number of calculations Adobe® Flash® Player must process to correctly display the visual effects you've created. Adobe® recommends that you apply a limited number of filters to a given object.

Each filter includes controls that let you adjust the strength and quality of the applied filter. Using lower settings improves performance on slower computers. If you are creating content for playback on a wide range of computers, or are unsure of the computing power available to your audience, set the quality level to Low to maximize playback performance.

About Pixel Bender filters

Adobe Pixel Bender™ is a programming language developed by Adobe that allows users to create custom filters, effects, and blend modes for use in Animate and After Effects. Pixel Bender is hardware independent and designed to run efficiently on a variety of GPU and CPU architectures automatically.

Pixel Bender developers create filters by writing Pixel Bender code and saving the code in a text file with the file extension pbj. Once written, a Pixel Bender filter can be used by any Animate document. Use ActionScript® 3.0 to load the filter and use its controls.

For more information about working with Pixel Bender in ActionScript, see ActionScript 3.0 Developer's Guide.

Lee Brimelow has posted several helpful Pixel Bender examples on his blog at http://theflashblog.com/?cat=44.

The following video tutorials demonstrate the use of Pixel Bender filters in Animate:

Working with filters

Enhanced in Animate CC

Each time you add a new filter to an object, it is added to the list of applied filters for that object in the Property inspector. You can apply multiple filters to an object, as well as remove filters that were previously applied. You can apply filters only to text, button, movie clip, components, and compiled clips objects.

You can create a filter settings library that lets you easily apply the same filter or sets of filters to an object. Animate stores the filter presets you create in the Filters section of the Property inspector in the Filters > Presets menu.

With Flash Professional CS6 and earlier versions, applying filters was restricted to movie clip and button symbols only. With Animate CC, you can now additionally apply Filters to Compiled Clips and Movie Clip components. This allows you to add various effects to components directly, at the click of a button (or two), making your applications look that much better. With Flash CS6, to add filters or other effects to components, one had to "wrap" it inside a movie clip symbol. That is:

1 Create or add a component on stage.

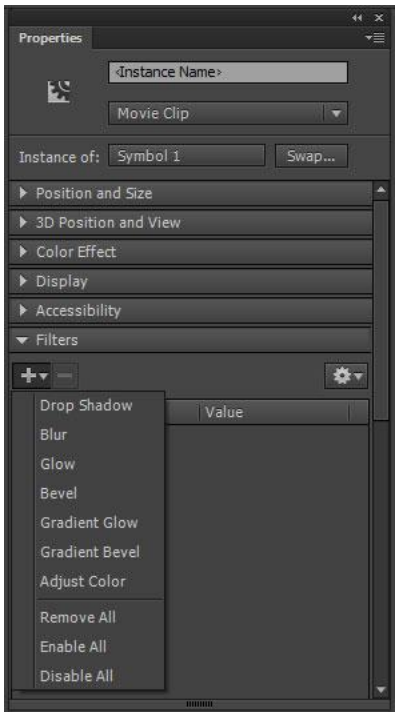
2 Right click on the component, and select Convert to Symbol.

With CS6 (and earlier versions), you could add filters or various other kinds of effects after wrapping the component inside a symbol. However, this was only a workaround, and not a suggested best practice. With Animate CC, you could add various filters to components by directly using the Filters, Color Effects, and Display Settings options available on the Properties Panel. To understand this key enhancement better, consider the following example: **Adding Bevel filter to a Button component**

1 Create or add a Button on stage from the Components Panel, and select the Button subsequently.

2 On the Properties Panel, click the button drop-down list in the Filters section and select Bevel filter. Properties and Values for the Bevel filter are displayed.

3 Modify or set appropriate values for any desired Property. For example, Blur X, Blur Y, Strength, Shadow, etc. You will notice the effects reflecting on the selected button simultaneously.



The Add Filter menu in the Property inspector

Apply or remove a filter

1 Select a text, button, or movie clip object to apply a filter to or remove a filter from.

2 In the Filters section of the Property panel, do one of the following:

- To add a filter, click the button, and select a filter. Experiment with the settings until you get the desired look.
- To remove a filter, select the filter to remove in the list of applied filters, and click the Remove Filter button . You can delete or rename any presets.

Copy and paste a filter

1 Select the object to copy a filter from, and select the Filters panel.

2 Select the filter to copy, and click the button. In the drop-down click Copy Selected Filter. To copy all filters, choose Copy All Filters.

3 Select the object to apply the filter to, and click the button. In the drop-down, click Paste Filters.

Apply a preset filter to an object

1 Select the object to apply a filter preset to, and select the Filter tab.

2 Click the button to open the drop-down.

3 Select the filter preset to apply from the list of available presets at the bottom of the drop-down list.

Note:

When you apply a filter preset to an object, Animate replaces any filters currently applied to the selected objects with the filters used in the preset.

Enable or disable a filter applied to an object

? By default all Filters stay enabled. Click the icon next to the filter name to disable the Filter in the Filter list. Click the X button next to the filter name to enable a Filter.

Note:

To toggle the enable state of the other filters in the list, Alt-click (Windows) or Option-click (Macintosh) the enable icon in the Filter list. If you Alt-click the icon, the selected filter is enabled, and all others filters in the list are disabled.

Enable or disable all filters applied to an object

? Click the button, and select Enable All or Disable All from the drop-down.

Note:

To enable or disable all of the filters in the list, Control-click the enable or disable icon in the Filter list.

Create preset filter libraries

Save filter settings as preset libraries that you can easily apply to movie clip and text objects. Share your filter presets with other users by providing them with the filter configuration file. The filter configuration file is an XML file that is saved in the Animate Configuration folder in the following location:

- Windows 7 and 8: C:\Users\username\AppData\Local\Adobe\Flash CC\language\Configuration
- **(Flash Professional CS6 or earlier versions only)** Windows XP: C:\Documents and Settings\username\Local Settings\Application Data\Adobe\Flash CS6\language\Configuration\Filters\filtername.xml
- **(Flash Professional CS6 or earlier versions only)** Windows Vista: C:\Users\username\Local Settings\Application Data\Adobe\Flash CS6\language\Configuration\Filters\filtername.xml
- Macintosh: Macintosh HD/Users/username/Library/Application Support/Adobe/Flash CC/language/Configuration/Filters/filtername.xml

Create a library of filters with preset settings

1. Apply the filter or filters to any selected object.
2. Click the button to add a new filter.
3. Select the filter and click the button, and choose Save As Preset.
4. Enter a name for the filter settings in the Save Preset As dialog box, and click OK.

Rename a filter preset

1. Click the button, and add a new filter.
2. Select the filter and click the button. Click Edit Presets.
3. Double-click the preset name to modify.
4. Enter a new preset name, and click OK.

Delete a filter preset

1. Click the button, and add a new filter.

2 Select the filter and click the button.

3 Click Edit Presets.

4 On the Edit Presets dialog, select the preset to remove, and click Delete.

Applying filters

Apply a drop shadow

The Drop Shadow filter simulates the look of an object casting a shadow onto a surface.

Text with the Drop Shadow filter applied

For a sample of a drop shadow with a classic tween, see the Animate Samples page at www.adobe.com/go/learn_fl_samples. Download and decompress the Samples zip file and navigate to the Graphics\AnimatedDropShadow directory.

1 Select the object to apply a drop shadow to.

2 In the Filters section of the Property inspector, click the button, and select Drop Shadow.

3 Edit the filter settings:

- To set the width and height of the drop shadow, set the Blur X and Y values.
- To set the darkness of the shadow, set the Strength value. The higher the numerical value, the darker the shadow.
- Select the quality level for the drop shadow. High is approximate to that of a Gaussian blur. Low maximizes playback performance.
- To set the angle of the shadow, enter a value.
- To set the distance of the shadow from the object, set the Distance value.
- Select Knockout to knock out (or visually hide) the source object and display only the drop shadow on the knockout image.
- To apply the shadow within the boundaries of the object, select Inner shadow.
- To hide the object and display only its shadow, select Hide Object. Hide Object lets you more easily create a realistic shadow.
- To open the Color Picker and set the shadow color, click the Color control.

Create a skewed drop shadow

Skewing the Drop Shadow filter to create a more realistic looking shadow

1 Select the object with the shadow you want to skew.

2 Duplicate (select Edit > Duplicate) the source object.

3 Select the duplicated object, and skew it using the Free Transform tool (Modify > Transform > Rotate And Skew).

4 Apply the Drop Shadow filter to the duplicated movie clip or text object. (It will already be applied if the object you duplicated already had a drop shadow.)

5 In the Filters panel, select Hide Object to hide the duplicated object while leaving its shadow visible.

6 Select Modify > Arrange > Send Backward to place the duplicated object and its shadow behind the original object that you duplicated.

7 Adjust both the Drop Shadow filter settings and the angle of the skewed drop shadow until you achieve the desired look.

Apply a blur

The Blur filter softens the edges and details of objects. Applying a blur to an object can make it appear as if it is behind other objects, or make an object appear to be in motion.

Text with the Blur filter applied

1 Select an object to apply a blur to, and select Filters.

2 Click the button, and select Blur.

3 Edit the filter settings on the Filter tab:

- To set the width and height of the blur, set the Blur X and Y values.
- Select the quality level for the blur. High is approximate to that of a Gaussian blur. Low maximizes playback performance.

Apply a glow

The Glow filter lets you apply a color around the edges of an object.

Text with the Glow filter applied

1 Select an object to apply a glow to, and select Filters.

2 Click the button, and select Glow.

3 Edit the filter settings in the Filter tab:

- To set the width and height of the glow, set the Blur X and Y values.
- To open the Color Picker and set the glow color, click the Color control.
- To set the sharpness of the glow, set the Strength value.
- To knock out (or visually hide) the source object and display only the glow on the knockout image, select Knockout.

Using the Glow filter with the Knockout option

- To apply the glow within the boundaries of the object, select Inner Glow.
- Select the quality level for the glow. High is approximate to that of a Gaussian blur. Low maximizes playback performance.

Apply a bevel

Applying a bevel applies a highlight to the object that makes it appear to be curved up above the background surface.

Text with a bevel applied

1. Select an object to apply a bevel to, and select Filters.
2. Click the button, and select Bevel.
3. Edit the filter settings in the Filter tab:
   - To set the type of bevel, select a bevel from the Type menu.
   - To set the width and height of the bevel, set the Blur X and Y values.
   - Select a shadow and highlight color for the bevel from the pop-up color palette.
   - To set the opacity of the bevel without affecting its width, set the Strength value.
   - To change the angle of the shadow that the beveled edge casts, set the Angle value.
   - To define the width of the bevel, enter a value for Distance.
   - To knock out (or visually hide) the source object and display only the bevel on the knockout image, select Knockout.

Apply a gradient glow

Applying a gradient glow produces a glow look with a gradient color across the surface of the glow. The gradient glow requires one color at the beginning of the gradient with an Alpha value of 0. You cannot move the position of this color, but you can change the color.

Text with a gradient glow applied

1. Select an object to apply a gradient glow to.
2. In the Filters section of the Property inspector, click the button, and select Gradient Glow.

3 Edit the filter settings on the Filter tab:

- Select the type of glow to apply to the object from the Type pop-up menu.
- To set the width and height of the glow, set the Blur X and Y values.
- To set the opacity of the glow without affecting its width, set the Strength value.
- To change the angle of the shadow that the glow casts, set the Angle value.
- To set the distance of the shadow from the object, set the Distance value.
- To knock out (or visually hide) the source object and display only the gradient glow on the knockout image, select Knockout.
- Specify a gradient color for the glow. A gradient contains two or more colors that fade or blend into one another. The color you select for the beginning of the gradient is referred to as the *alpha* color.
- To change a color in the gradient, select one of the color pointers below the gradient definition bar and click the color space that appears directly below the gradient bar to display the Color Picker. Sliding these pointers adjusts the level and position of that color in the gradient.
- To add a pointer to the gradient, click on or below the gradient definition bar. To create a gradient with up to 15 color transitions, add up to 15 color pointers. To reposition a pointer on the gradient, drag the pointer along the gradient definition bar. To remove a pointer, drag it down and off the gradient definition bar.
- Select the quality level for the gradient glow. High is approximate to that of a Gaussian blur. Low maximizes playback performance.

Apply a gradient bevel

Applying a gradient bevel produces a raised look that makes an object appear to be raised above the background, with a gradient color across the surface of the bevel. The gradient bevel requires one color in the middle of the gradient with an alpha value of 0.

1 Select an object to apply a gradient bevel to.

2 In the Filters section of the Property inspector, click the button, and select Gradient Bevel.

3 Edit the filter settings on the Filter tab:

- Select the type of bevel to apply to the object from the Type pop-up menu.
- To set the width and height of the bevel, set the Blur X and Y values.
- To affect the smoothness of the bevel without affecting its width, enter a value for Strength.
- To set the angle of the light source, enter a value for Angle.
- To knock out (or visually hide) the source object and display only the gradient bevel on the knockout image, select Knockout.
- Specify a gradient color for the bevel. A gradient contains two or more colors that fade or blend into one another. The middle pointer controls the alpha color of the gradient. You can change the color of the alpha pointer, but you cannot reposition this color in the gradient.

  To change a color in the gradient, select one of the color pointers below the gradient definition bar, and click the color space that appears directly below the gradient bar to display the Color Picker. To adjust the level and position of that color in the gradient, slide these pointers.

  To add a pointer to the gradient, click on or below the gradient definition bar. To create a gradient with up to 15 color transitions, add up to 15 color pointers. To reposition a pointer on the gradient, drag the pointer along the gradient definition bar. To remove a pointer, drag it down and off the gradient definition bar.

Apply the Adjust Color filter

The Adjust Color filter allows you to finely control the color attributes of the selected object, including contrast, brightness, saturation, and hue.

1. Select an object to adjust the color for.
2. In the Filters section of the Property inspector, click the button, and select Adjust Color.
3. Enter values for the color attributes. The attributes and their corresponding values are as follows:

   Contrast Adjusts the highlights, shadows, and midtones of an image.

   Brightness Adjusts the brightness of an image.

   Saturation Adjusts the intensity of a color.

   Hue Adjusts the shade of a color.
4. To reset all of the color adjustments to 0 and return the object to its original state, click Reset Filter.

Sharing library assets across files

Sharing library assets at runtime

About runtime shared library assets

Shared library assets let you use assets from one FLA file in another FLA file. This can be useful in these situations:

- When more than one FLA file needs to use the same artwork or other assets.
- When a designer and a developer want to be able to edit artwork and ActionScript code in separate FLA files for a joint project.

Sharing library assets works like this:

- For runtime shared assets, assets from a source document are linked as external files in a destination document. Runtime assets are loaded into the destination document during document playback—that is, at runtime. The source document containing the shared asset does not need to be available on your local network when you author the destination document. The source document must be posted to a URL for the shared asset to be available to the destination document at runtime.

Working with runtime shared assets

Using runtime shared library assets involves two procedures. First, the author of the source document defines a shared asset in the source document and enters an identifier string for the asset and a URL *(HTTP or HTTPS only)* where the source document will be posted.

Second, the author of the destination document defines a shared asset in the destination document and enters an identifier string and URL identical to those used for the shared asset in the source document. Alternatively, the destination document author can drag the shared assets from the posted source document into the destination document library. The ActionScript version set in the Publish settings must match that of the source document.

In either scenario, the source document must be posted to the specified URL for the shared assets to be available for the destination document.

Define runtime shared assets in a source document

To define sharing properties for an asset in a source document and make the asset accessible for linking to destination documents, use the Symbol Properties dialog box or the Linkage Properties dialog box.

1. With the source document open, select Window > Library:
2. Do one of the following:
   - Select a movie clip, button, or graphic symbol in the Library panel, and select Properties from the Library Panel menu. Click Advanced.
   - Select a font symbol, sound, or bitmap, and select Linkage from the Library Panel menu.
3. For Linkage, select Export For Runtime Sharing to make the asset available for linking to the destination document.
4. Enter an identifier for the symbol. Do not include spaces. This is the name Animate uses to identify the asset when linking to the destination document.

   Note:

   Animate also uses the linkage identifier to identify a movie clip or button that is used as an object in ActionScript.
5. Enter the URL where the SWF file containing the shared asset will be posted, and click OK.

   When you publish the SWF file, you must post the SWF file to the URL you specified so that the shared assets are available to destination documents.

Link to runtime shared assets from a destination document

You can link to a shared asset by entering its URL or by dragging the asset into the destination document.

Link a shared asset to a destination document by entering the identifier and URL

1. In the destination document, select Window > Library.
2. Do one of the following:
   - Select a movie clip, button, graphic symbol, bitmap, or sound in the Library panel, and select Properties from the Library Panel menu. Click Advanced.
   - Select a font symbol, and select Linkage from the Library Panel menu.
3. For Linkage, select Import For Runtime Sharing to link to the asset in the source document.
4. Enter an identifier for the symbol, bitmap, or sound that is identical to the identifier used for the symbol in the source document. Do not include spaces.
5. Enter the URL where the SWF source file containing the shared asset is posted, and click OK.

Link a shared asset to a destination document by dragging

1. In the destination document, do one of the following:
   - Select File > Open.
   - Select File > Import > Open External Library.
2. Select the source document and click Open.
3. Drag the shared asset from the source document Library panel into the Library panel or onto the Stage in the destination document.

Turn off sharing for a symbol in a destination document

1 In the destination document, select the linked symbol in the Library panel and do one of the following:
   - If the asset is a movie clip, button, or graphic symbol, select Properties from the Library Panel menu.
   - If the asset is a font symbol, select Linkage from the Library Panel menu.
2 Deselect Import For Runtime Sharing, and click OK.

Sharing library assets at author-time

Sharing assets at author-time has these advantages:

- Allows you to avoid the need for redundant copies of assets used in more than one FLA file. For example, if you are developing a FLA for web browsers, another for iOS and another for Android, you can share assets among the 3 files.
- When you edit a shared asset in one FLA file, the changes are reflected in other FLA files that use the asset when they are opened or brought into focus.

There are 2 ways of sharing library assets during authoring:

- Using symbols from external FLA files by linking to them from symbols in another FLA file.
- Sharing symbols among FLA files that are part of the same Animate project in the Project panel. For information about using the Project panel, see Work with Multiple File Types in Animate CC.

Sharing by linking to symbols in separate FLA files works like this:

- For shared assets during authoring, update or replace any symbol in a FLA file you are authoring with any symbol in any other FLA file available on your local network.
- Update the symbol in the destination document as you author the document.
- The symbol in the destination document retains its original name and properties, but its contents are updated or replaced with those of the symbol you select.

Sharing symbols using the Project panel works like this:

- You create a project in the Project panel and create a FLA file in the project.
- In that FLA file, you specify which symbols you want to share with other files by checking the sharing checkbox for each item in the Library panel.
- Create a second FLA file in the project.
- Copy and paste layers, frames, or items on the Stage from the first FLA file to the second.
- Animate moves the shared library items in the pasted elements to a separate file called AuthortimeSharedAssets.FLA within the project folder.

The following assets types are sharable within a project:

Asset type	Sharable on its own?	Sharable if inside a movie clip?
Movie clip symbol	Yes	Yes
Graphic symbol	Yes	Yes
Button symbol	Yes	Yes
Font symbol	No	Yes
FLV video	No	Yes
Embeded video	No	Yes

Asset type	Sharable on its own?	Sharable if inside a movie clip?
Sound (any format)	No	Yes
Bitmap (any format)	No	Yes
Compiled clip (SWC)	No	Yes
Component (symbol-based)	Yes	Yes

Update or replace shared symbols

You can update or replace a movie clip, button, or graphic symbol in a document with any other symbol in a FLA file accessible on your local network. The original name and properties of the symbol in the destination document are preserved, but the contents of the symbol are replaced with the contents of the symbol you select. Any assets that the selected symbol uses are also copied into the destination document.

1. With the document open, select a movie clip, button, or graphic symbol in the Library panel and select Properties from the panel Options menu.
2. If the Linkage and Source areas of the Symbol Properties dialog box are not showing, click Advanced.
3. To select a new FLA file, click Browse.
4. Navigate to a FLA file that contains the symbol to use to update or replace the selected symbol in the Library panel, and click Open.
5. Navigate to a symbol, and click OK.
6. Do one of the following:
   - In the Symbol Properties dialog box, under Source, select Always Update Before Publishing and click OK.
   - In the Symbol Properties dialog box, under Authortime Sharing, select Update Automatically and click OK

Define assets for sharing in a project

Sharing assets among FLA files in a project allows you to edit the asset in one file and see the changes reflected in the other FLA files that use the asset.

1. Create a Animate project.
2. In a FLA file in the project, for each library asset you want to share with other FLA files in the project, do one of the following:
   - Open the Library panel and select the Link checkbox next to the asset name.
   - With the asset selected in the Library panel, choose Properties from the panel Options menu and then click the Share with Project button.
3. In the Timeline or on the Stage, copy layers, frames, or Stage items containing shared assets.
4. In a separate FLA file in the same project, paste the layers, frames, or stage items into a separate FLA filer in the same project.

Videos and tutorials

- Tutorial: Creating mobile projects with shared assets and the Project panel (Yuki Shimizu, Adobe.com)

Reshape lines and shapes

Display and adjust points with the Subselection tool

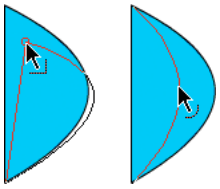
1 Select the Subselection tool .

2 Click the line or shape outline.

Reshape a line or shape

To reshape a line or shape outline, drag any point on a line using the Selection tool. The pointer changes to indicate what type of reshaping it can perform on the line or fill.

Animate adjusts the curve of the line segment to accommodate the new position of the moved point. If the repositioned point is an end point the line will lengthen or shorten. If the repositioned point is a corner, the line segments forming the corner remain straight as they become longer or shorter.



When a corner appears next to the pointer, you can change an end point. When a curve appears next to the pointer, you can adjust a curve.

Some brush stroke areas are easier to reshape if you view them as outlines.

If you are having trouble reshaping a complex line, smooth it to remove some of its details, making reshaping easier. Increasing the magnification can also make reshaping easier and more accurate.

1 Select the Selection tool .

2 Do one of the following:

- To reshape the segment, drag from any point.
- To drag a line to create a new corner point, control-click (Windows) or Option-click (Macintosh).

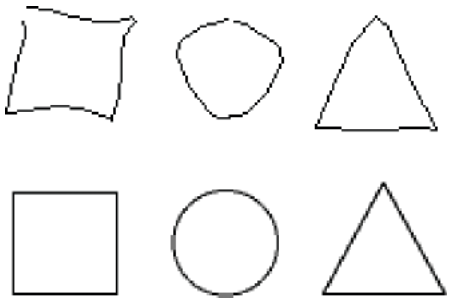
Straighten and smooth lines

Straightening makes small straightening adjustments to lines and curves you already drew. It has no effect on segments that are already straight.

Note:

To adjust the degree of automatic smoothing and straightening, specify preferences for drawing settings.

To make Animate recognize shapes, use the straightening technique. If you draw any oval, rectangular, or triangular shapes with the Recognize Shapes option turned off, use the Straightening option to make the shapes geometrically perfect. Shapes that are touching, and thus connected to other elements, are not recognized.



Shape recognition turns the top shapes into the bottom shapes.

Smoothing softens curves and reduces bumps or other variations in a curve's overall direction. It also reduces the number of segments in a curve. Smoothing is relative, however, and has no effect on straight segments. It is particularly useful when you are having trouble reshaping a number of very short curved line segments. Selecting all the segments and smoothing them reduces the number of segments, producing a gentler curve that is easier to reshape.

Repeated application of smoothing or straightening makes each segment smoother or straighter, depending on how curved or straight each segment was originally.

- To smooth the curve of each selected stroke, select the Selection tool and click the Smooth modifier in the Options section of the Tools panel. Each click of the Smooth modifier button makes the selected stroke progressively smoother.
- To enter specific parameters for a smoothing operation, choose Modify > Shape > Smooth. In the Smooth dialog box, enter values for the Smooth Angles Above, Smooth Angles Below, and Smoothing Strength parameters.
- To make small straightening adjustments on each selected fill outline or curved line, select the Selection tool and click the Straighten modifier in the Options section of the Tools panel.
- To enter specific parameters for a straightening operation, choose Modify > Shape > Straighten. In the Straighten dialog box, enter a value for the Straighten Strength parameter.
- To use shape recognition, select the Selection tool and click the Straighten modifier, or select Modify > Shape > Straighten.

Optimize curves

Optimizing smooths curves by refining curved lines and filling outlines, reducing the number of curves used to define these elements. Optimizing curves also reduces the size of the Flash Professional document (FLA file) and the exported Animate application (SWF file). Apply optimization to the same elements multiple times.

1. Select the drawn elements to optimize and select Modify > Shape > Optimize.
2. To specify the degree of smoothing, drag the Optimization Strength slider. The results depend on the curves selected. Generally, optimizing produces fewer curves, with less resemblance to the original outline.
3. To display a message indicating the number of segments in the selection before and after the optimization, select the Show Totals Message option. Animate displays the message after the operation completes.
4. Click OK.

Modify shapes

1 To convert lines to fills, select a line or multiple lines and select Modify > Shape > Convert Lines To Fills. Selected lines are converted to filled shapes, which allows you to fill lines with gradients or to erase a portion of a line. Converting lines to fills can make file sizes larger, but it can also speed up drawing for some animations.

2 To expand the shape of a filled object, select a filled shape, and select Modify > Shape > Expand Fill. Enter a value in pixels for Distance and select Expand or Inset For Direction. Expand enlarges the shape, and Inset reduces it.

This feature works best on a single, small, filled color shape with no stroke, that does not contain many small details.

3 To soften the edges of an object, select a filled shape, and select Modify > Shape > Soften Fill Edges. Set the following options:

Distance The width, in pixels, of the soft edge.

Number Of Steps Controls how many curves are used for the soft edge effect. The more steps you use, the smoother the effect. Increasing steps also creates larger files and slows drawing.

Expand Or Inset Controls whether the shape is enlarged or reduced to soften the edges.

This feature works best on a single filled shape that has no stroke, and can increase the file size of a Animate document and the resulting SWF file.

Delete everything on the Stage

? Double-click the Eraser tool in the toolbar. This erases all types of content on the Stage and pasteboard.

Remove stroke segments or filled areas

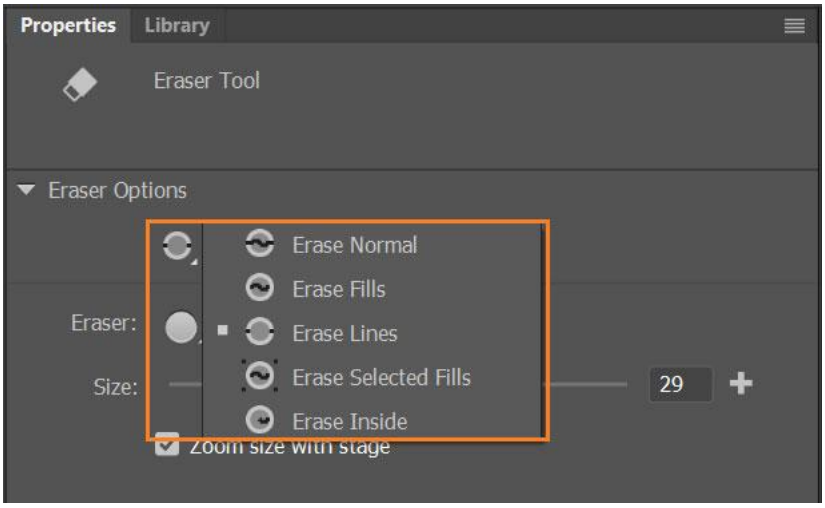
1 Select the Eraser tool, and then click the Faucet modifier .

2 Click the stroke segment or filled area to delete.

Erase by dragging

1 Select the Eraser tool.

2 Click the Eraser Mode modifier and select an erasing mode:



Eraser mode modifiers

Erase Normal Erases strokes and fills on the same layer.

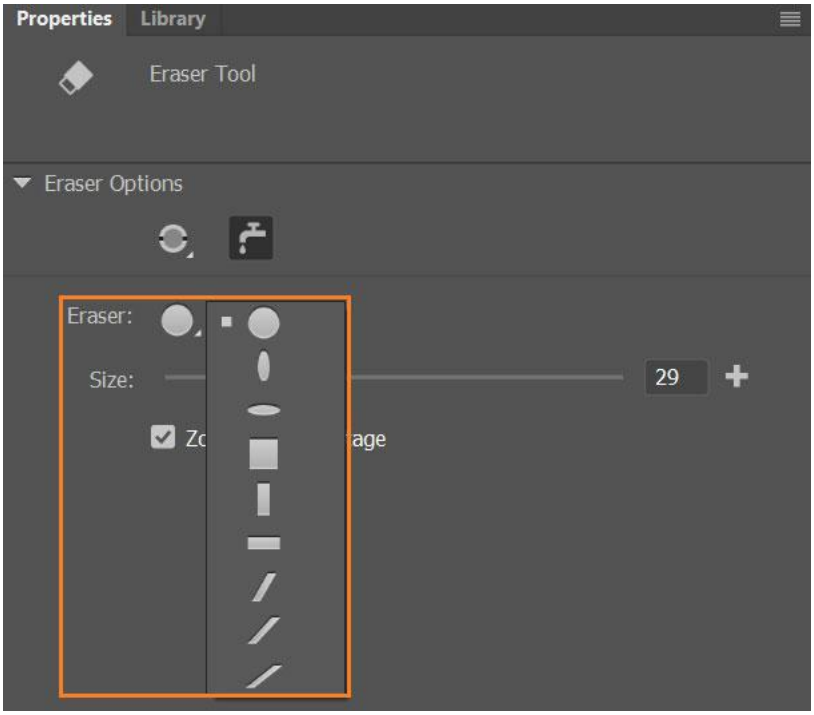
Erase Fills Erases only fills; strokes are not affected.

Erase Lines Erases only strokes; fills are not affected.

Erase Selected Fills Erases only the currently selected fills and does not affect strokes, selected or not. (Select the fills to erase before using the Eraser tool in this mode.)

Erase Inside Erases only the fill on which you begin the Eraser stroke. If you begin erasing from an empty point, nothing is erased. Strokes are unaffected by the eraser in this mode.

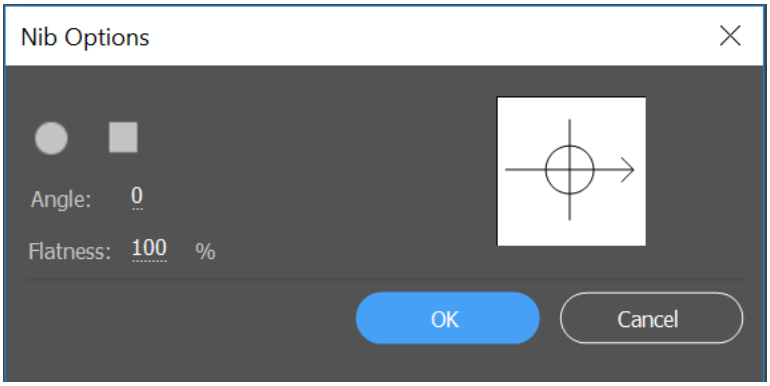
3 Click the Eraser Shape modifier and select an eraser shape and size. Make sure that the Faucet modifier is not selected.



Eraser shapes

Use the horizontal scroll bar to adjust the size of the Eraser shape.

4 Customize, delete, or edit the customized shape. Click the **Add Custom Eraser shape** icon adjacent to Eraser shape icon to create your customized Eraser shape. Choose the shape, angle and flatness to define the Nib properties. Click **OK** to create the customized shape.



Eraser-Nib-options

5 Drag on the Stage.

Working with Adobe Color panel

Adobe® Color® is a web-based application used to experiment with, create, and share color themes that you use in a project. Animate CC (formerly Flash Professional CC) is integrated with Color panel that enables you to view and use the color themes that you have created or marked as favorite in the Adobe Color application. For more information about Adobe Color, visit this link.

Color panel

In Animate CC, the Adobe Color panel (Windows > Extensions > Adobe Color themes) displays:

- Themes you have created, and are synced with your account on the Adobe Color website (color.adobe.com).
- Public themes that you have marked as a favorite themes on the Adobe Color website.

The Adobe ID used in Animate CC is automatically used to sign-in to the Adobe Color website, and the Color panel is refreshed.

Note:

If the credentials you are using with Animate CC do not have an associated Color ID, then a Color ID is automatically created using the Animate credentials. You can then access the Adobe Color website using your Adobe ID credentials.

Using the Color panel

Note:

For the Color panel to work, Internet connectivity is required when you launch Animate. Color Panel cannot be used, if you do not have Internet connectivity.

The swatches and color themes available in the Color panel are read-only. You can use a swatch or theme in your artwork, directly from the Color panel. However, to modify a swatch or color theme, first add them to the Swatches panel.

1. Click Window > Extensions > Adobe Color themes to open the Color panel.

   All themes available in your Adobe Color account when Animate was launched are displayed in the Color Panel.

2. If you have added a theme in Color after you started Animate, click Refresh in the Color panel to include the latest theme.

A Theme search by name ***B*** *Favorite theme icon* ***C*** *Theme folder icon* ***D*** *Refresh* ***E*** *Launch Color website* ***F*** *Theme name*

Note:

The Color panel lists the themes that you have created, modified, or marked as favorite (listed under Adobe Color website > Mycolor)

3 You can add an entire theme to your Swatches panel (Window > Swatches) by clicking the Theme Folder or Favorite Theme icon. The theme is added to the Color folder within Swatches panel.

4 If you have an extensive list of themes, search the theme using the Find box. Searches are performed on the names of the themes.

Working with Fireworks files

About imported Fireworks PNG files

You can import Adobe® Fireworks PNG files into Animate as flattened images or as editable objects. When you import a PNG file as a flattened image, the entire file (including any vector artwork) is rasterized, or converted to a bitmap image. When you import a PNG file as editable objects, vector artwork in the file is preserved in vector format. Choose to preserve placed bitmaps, text, filters (called effects in Fireworks), and guides in the PNG file when you import it as editable objects.

About imported filters and blends from Fireworks PNG files

When you import Fireworks® PNG files, you can retain many of the filters and blending modes applied to objects in Fireworks and continue to modify those filters and blends using Animate.

Animate only supports modifiable filters and blends for objects imported as text and movie clips. If an effect or blend mode is not supported, Animate rasterizes or ignores it when it is imported. To import a Fireworks PNG file that contains filters or blends that Animate does not support, rasterize the file during the import process. After this operation, you cannot edit the file.

Fireworks effects supported in Animate

Animate imports the following Fireworks effects as modifiable filters:

Fireworks effect	Animate filter
Drop shadow	Drop shadow
Solid shadow	Drop shadow
Inner shadow	Drop shadow (with Inner shadow automatically selected)
Blur	Blur (where blurX = blurY=1)
Blur more	Blur (where blurX = blurY=1)
Gaussian blur	Blur
Adjust color brightness	Adjust color
Adjust color contrast	Adjust color

Fireworks blend modes supported in Animate

Animate imports the following Fireworks blend modes as modifiable blends:

Fireworks blending mode	Animate blending mode
Normal	Normal
Darken	Darken
Multiply	Multiply
Lighten	Lighten
Screen	Screen

Overlay	Overlay
Hard light	Hard light
Additive	Add
Difference	Difference
Invert	Invert
Alpha	Alpha
Erase	Erase

Animate ignores all other blending modes imported from Fireworks. The blending modes that Animate does not support are Average, Negation, Exclusion, Soft Light, Subtractive, Fuzzy Light, Color Dodge, and Color Burn.

Importing text from Fireworks into Animate

When you import text from Fireworks into Flash Professional 8 or later, the text is imported with the default anti-alias setting of the current document.

If you import the PNG file as a flattened image, you can start Fireworks from Animate and edit the original PNG file (with vector data).

When you import multiple PNG files in a batch, you select import settings one time. Animateuses the same settings for all files in the batch.

Note:

To edit bitmap images in Animate, convert the bitmap images to vector artwork or break apart the bitmap images.

1. Select File > Import > Import To Stage or Import To Library.
2. Select PNG Image from the Files Of Type (Windows) or Show (Macintosh) pop-up menu.
3. Navigate to a Fireworks PNG image and select it.
4. Click Open.
5. Select one of the following for Location:

   Import All Page(s) into New Scene(s) Imports all pages in the PNG file as scenes within a movie clip, with all of their frames and layers intact inside the movie clip symbol. A new layer is created that uses the name of the Fireworks PNG file name. The first frame (page) of the PNG document is placed on a keyframe that starts at the last keyframe; all other frames (pages) follow.

   Import One Page into Current Layer Imports the selected page (identified in the Page Name pop-up menu) of the PNG file into the current Animate document in a single new layer as a movie clip. The contents of the selected page are imported as a movie clip, with all of their original layer and frame structure intact. If the page movie clip has frames inside it, each frame is a movie clip in itself.

   Page Name Specifies the Fireworks page you want to import into the current scene.

6. Select one of the following for File Structure:

   Import As Movie Clip And Retain Layers Imports the PNG file as a movie clip, with all of its frames and layers intact inside the movie clip symbol.

   Import Page(s) as New Layer(s) Imports the PNG file into the current Animate document in a single new layer at the top of the stacking order. The Fireworks layers are flattened into the single layer. The Fireworks frames are contained in the new layer.

7 For Objects, select one of the following:

Rasterize If Necessary To Maintain Appearance Preserves Fireworks fills, strokes, and effects in Animate.

Keep All Paths Editable Keeps all objects as editable vector paths. Some Fireworks fills, strokes, and effects are lost on import.

8 For Text, select one of the following:

Rasterize If Necessary To Maintain Appearance Preserves Fireworks fills, strokes, and effects in text imported into Animate.

Keep All Paths Editable Keeps all text editable. Some Fireworks fills, strokes, and effects are lost on import.

9 To flatten the PNG file into a single bitmap image, select Import As A Single Flattened Bitmap. When this option is selected, all other options are dimmed.

10 Click OK.

Using Animate CC with Adobe Scout

Animate CC can now leverage the advanced telemetry features provided by Adobe Scout. This feature allows you to retrieve and use the intuitively collated profiling data provided by Scout.

Scout is an analysis and profiling tool for Flash runtime that allows you to analyze performance of applications designed for mobile, desktop, or web. Scout is designed to provide accurate data aggregated from several system resources. The data provided is intuitive enough to easily measure, profile, and analyze performance of applications.

Scout provides basic telemetry data for any SWFs running on a computer. To enable and view advanced data, Animate provides additional options on the **Publish Settings** dialog.

To integrate Animate CC with Scout, download and install Scout on the same computer that has Animate CC installed. You could also install Adobe Scout on a different system, and use the Remote Logging functionality, to retrieve telemetry data for SWFs running remotely.

Note: Ensure that the Wi-Fi connection between the system and the device running the application is non-faulty and stable.

To download and install Adobe Scout, click here.

Enabling Detailed Telemetry data

To view and analyze your performance of applications with detailed telemetry data, do the following:

1 In Animate CC, select **File** > **Publish Settings** to bring up the **Publish Settings** dialog.

2 On the **Publish Settings** dialog, drill-down the **Advanced** options to select the **Enable Detailed Telemetry** option.

3 You can choose to provide a password to secure access to the detailed telemetry data for your application. If you choose to enable password protection, you can access detailed telemetry data for your application, only after providing the password in Scout.

4 Click **OK**.

Enabling Detailed Telemetry Data for Adobe AIR publishing for iOS devices

To enable **Detailed Telemetry Data** for Adobe AIR applications written for iOS devices, do the following.

1. Ensure that you have the **Enable Detailed Telemetry** option selected on the **Publish Settings** dialog. For more information, see Enabling Detailed Telemetry data
2. On the **Properties** panel, click the button, beside the **Target** drop-down to bring up the **AIR for iOS Settings** dialog.
3. On the **AIR for iOS Settings** dialog, switch to the **Deployment** tab and select the **Enable Sampler** option in the **Telemetry Options** section.
4. Click **OK**.

Enabling Detailed Telemetry Data for Adobe AIR publishing for Android devices

To enable **Detailed Telemetry Data** for Adobe AIR applications written for Android devices, do the following.

1. Ensure that you have the **Enable Detailed Telemetry** option selected on the **Publish Settings** dialog.
2. On the **Properties** panel, click the button, beside the **Target** drop-down to bring up the **AIR for Android Settings** dialog.
3. On the **AIR for iOS Settings** dialog, switch to the **Deployment** tab and select the **Enable Sampler** option in the **Telemetry Options** section.
4. On the **Permissions** tab, select the **Internet** option.
5. Click **OK**.

Working with Text Layout Framework (TLF) text

Note: (Animate CC only) The Text Layout Framework is deprecated and the functionality is unavailable with Animate CC. If a FLA file containing TLF Text, previously saved with an older version of Animate, is opened with Animate CC, then TLF is converted to Classic Text.

Beginning in Flash Professional CS5, you can add text to a FLA file using a new text engine called the Text Layout Framework (TLF). TLF supports a wider array of rich text layout features and fine control of text attributes. TLF text allows greater control of text than the previous text engine, now called Classic text.

TLF text provides the following enhancements over Classic text:

- Print-quality typography.
- More character styles, including leading, ligatures, highlight color, underline, strikethrough, case, digit case, and more.
- More paragraph styles, including multi-column support with gutter width, last line justification options, margins, indents, paragraph spacing, and container padding values.
- Control of more Asian text attributes, including Tate Chu Yoko, Mojikumi, Kinsoku Shori Type, and Leading model.
- You can apply attributes such as 3D Rotation, Color Effects, and Blend Modes to TLF text without placing it in a movie clip symbol.
- Text can flow across multiple text containers. These containers are called threaded or linked text containers.

- The ability to create right-to-left text for Arabic and Hebrew scripts.
- Support for bi-directional text, where right-to-left text can contain elements of left-to-right text. This support is important for embedding English words or Arabic numerals within Arabic/Hebrew text, for example.

Adobe recommends...

Adobe recommends...

About TLF text

Before you begin

When creating text, it is important to understand the following fundamentals of working with text in Animate:

- There are two types of TLF text containers, point text, and area text. A point text container's size depends solely on the text it contains. An area text container's size is independent of the amount of text it contains. Point text is the default. To change a point text container to area text, resize it with the selection tool or double-click the small circle at the bottom-right corner of the container bounding box.
- TLF text requires that ActionScript 3.0 and Flash Player 10 or higher are specified in the publish settings of your FLA file. For more information, see Specify publish settings for Animate.
- When using TLF text, the Property inspector has three display modes, depending on the current type of text selection:
  - Text tool mode; when the Text tool has been selected in the Tools panel and no text is selected in the Animate document.
  - Text object mode; when an entire text block is selected on the Stage.
  - Text edit mode; when a text block is being edited.
- You can create three types of text block with TLF text, depending on how you want the text to behave at runtime:
  - Read Only: when published as SWF file, the text cannot be selected or edited.
  - Selectable: when published as SWF file, the text is selectable and can be copied to the clipboard, but is not editable. This setting is the default for TLF text.
  - Editable: when published as SWF file, text is selectable and can be edited.
- Unlike Classic text, TLF text does not support PostScript Type 1 fonts. TLF supports only OpenType and TrueType fonts. When working with TLF text, PostScript fonts are not available in the **Text > Font** menu. If you apply a PostScript Type 1 font to a TLF text object using one of the other font menus, Animate substitutes the _sans device font instead. When working with Classic text, all installed PostScript fonts are available in the Font menus.
- TLF text requires a specific ActionScript library to be available to Flash Player at runtime. If this library is not already present on the playback computer, Flash Player automatically downloads it. For more information about the library, see Publishing SWF files with TLF text.
- TLF text cannot be used as a layer mask at author-time. To create a mask with text, create the mask with ActionScript 3.0 or use Classic text for the mask. See Masking display objects in the ActionScript 3.0 Developer's Guide.
- Anti-aliasing settings for TLF text are not reflected on the Stage until the Animate file is exported as a SWF file. To see the effect of anti-aliasing settings, use the Control > Test command or the **File > Publish** command.

- To use Cascading Style Sheets (CSS), use ActionScript to apply a stylesheet. For more information, see Applying cascading style sheets in the ActionScript 3.0 Developer's Guide.
- TLF has extensive ActionScript APIs for creating and manipulating text flows at runtime. These APIs enable more features like text decoration, in-line images, the ability to read HTML and TLFMarkup languages, and others useful for creating dynamic content.

Converting between Classic and TLF text

When you convert a text object from one text engine to the other, Animate preserves most of the formatting. However, because the text engines are different in their capabilities, some formatting may be slightly different, including letter spacing and line spacing. Inspect the text carefully and reapply any settings that have been changed or lost.

If you need to convert text from Classic to TLF, try to do so only once rather than converting back and forth more than once. The same is true for converting TLF text to Classic text.

When converting between TLF and Classic text, Animate converts text types as follows:

- TLF Read Only> Classic Static
- TLF Selectable > Classic Static
- TLF Editable > Classic Input

Publishing SWF files with TLF text

To function properly, all TLF text objects rely on a specific TLF ActionScript library, also called a Runtime Shared Library or RSL. Because the library is separate from your published SWF file, the SWF file size is minimized. During authoring, Animate provides the library. At runtime, after you have uploaded your published SWF file to a web server, the library is provided in the following ways:

1. The local computer. Flash Player looks for a copy of the library on the local machine it is playing on. If the SWF file is not the first to use TLF text on that computer, the computer already has a local copy of the library in its Flash Player cache. Once TLF text has been in use on the Internet for some time, most end user computers have a local copy of the library file. However, it is possible for Flash Player end users to disable this feature on their computer.
2. On Adobe.com. If no local copy is available, Flash Player will query Adobe's servers for a copy of the library. The library only has to download one time per computer. After that, all subsequent SWF files that play on the same computer will use the previously downloaded copy of the library.
3. On your web server. If Adobe's servers are not available for some reason, Flash Player looks for the library in the web server directory where the SWF file resides. To provide this extra level of back-up, manually upload the library file to the web server along with your SWF file. You can also specify an alternate path for the library on your server to allow multiple SWF files in different locations to point to a single instance of the library. More information about the assets file is provided below.

When you publish a SWF file that uses TLF text, Animate creates an extra file named textLayout_X.X.X.XXX.swz (where the Xs are replaced by the version number) next to your SWF file. You can optionally choose to upload this file to your web server along with your SWF file. This allows for the rare case where Adobe's servers are not available for some reason.

You can also avoid the need for Flash Player to do a separate download of the TLF assets by compiling the assets within your SWF file. You can do this in the ActionScript settings of your FLA file. However, remember that these assets add significantly to the size of your published SWF file and should only be included when download performance is not a concern. This feature can also be useful when Adobe servers are not available, such as when deploying SWF files on closed or private networks which may restrict access to outside URLs.

To compile the TLF ActionScript assets in published SWF files:

1. Choose File > Publish Settings.
2. Click the Animate Tab.
3. Click the Settings button next to the Script menu.
4. Click the Library Path tab.
5. Select Merged Into Code from the Default Linkage menu.

The following are recommendations for handling the TLF library for different deployment scenarios

- Web-based SWF file: use the default behavior of allowing Flash Player to download the RSL if necessary.
- AIR-based SWF file: Compile the RSL into the SWF file. This way text functionality of the AIR application will not be compromised while offline.
- iPhone-based SWF: It is not recommended that you use TLF on the iPhone for performance reasons. If you do, compile the TLF code into the SWF because the iPhone cannot load RSLs.

When the TLF ActionScript assets are not embedded or available on the local playback computer, there can be a slight delay in SWF playback while Flash Player downloads the assets. You can choose the type of preloader SWF that Flash Player displays while the assets are downloaded. You choose the preloader by setting the Preloader Method in the ActionScript 3.0 settings.

To set the Preloader Method:

1. Choose File > Publish Settings.
2. In the Animate tab, click the ActionScript 3.0 Settings button.
3. In the Advanced ActionScript 3.0 Settings dialog box, select a method from the Preloader Method menu. The available methods are:
   - Preloader SWF: this is the default. Animate embeds a small preloader SWF file inside your published SWF file. This preloader displays a progress bar while the assets load.
   - Custom Preloader Loop: use this setting is you want to use a preloader SWF of your own.

   The Preloader Method setting is only available if the Default Linkage is set to Runtime Shared Library (RSL).

Tutorials and Videos

- Tutorial: Using a Custom Preloader Loop With TLF Text - Jeff Kamerer, Adobe
- TechNote: Loading child SWFs with TLF content generates reference errors

Reducing SWF file size with TLF text (CS5.5 only)

Most TLF text requires that a specific ActionScript library be compiled into your SWF file. This library adds about 20k to the file size.

If you need to keep the file size as small as possible, you can prevent the ActionScript library from being included by limiting your use of TLF text in the following ways:

- Use only Selectable or Read Only TLF text types.
- Do not give any TLF text instances an instance name in the Properties panel. This means that the text cannot be manipulated with ActionScript.

Even with these limitations, you can still take advantage of the text layout capabilities of TLF text.

Working with character styles

Character styles are attributes that apply to a single character or a set of characters, rather than to whole paragraphs or text containers. To set character styles, you work with the Character and Advanced Character sections of the Text Property inspector.

The Character section of the Property inspector includes the following text properties:

Family The name of the font. (Note TLF text only supports OpenType and TrueType fonts.)

Style Regular, Bold, or Italic. Faux italic and faux bold styles are not available to TLF text objects. Some fonts may also include more styles, such as Black, BoldItalic, etc.

Size The size of the characters in pixels.

Leading The vertical space between lines of text. By default, Leading is expressed as a percentage but can also be expressed in points.

Color The color of the text.

Tracking The amount of space between the selected characters.

Highlight The highlight color.

Kerning Kerning: Adds or subtracts space between specific pairs of characters. TLF text automatically kerns characters using the kerning information built in to most fonts.

When Asian text options are disabled, the Auto-kerning check box appears. When Auto-kerning is on, kerning information in the font is used. When Auto-kerning is off, kerning information in the font is ignored and no kerning is applied.

When Asian text options are enabled, Kerning can have these values:

- Auto: Uses the kerning information built in to the font for Latin characters. For Asian characters, applies kerning only to those characters that have kerning information built in to them. Asian characters which do not have kerning information are Kanji, Hiragana, and Katakana.
- On: Always turns on kerning.
- Off: Always turns off kerning.

Anti-alias There are three anti-aliasing modes to choose from

- Use Device Fonts: Specifies that the SWF file use the fonts installed on the local computer to display the fonts. Typically, device fonts are legible at most font sizes. This option doesn't increase the size of the SWF file. However, it forces you to rely on the fonts installed on the user's computer for font display. When using device fonts, choose only commonly installed font families.
- Readability: Allows for improved legibility of fonts, particularly at small sizes. To use this option for a given text block, embed the font used by the text object. For instructions, see Embed fonts for consistent text. (Do not use this option if you intend to animate text; instead, use the Animation mode.)
- Animation: Creates a smoother animation by ignoring alignment and kerning information. To use this option for a given text block, embed the font used by the text block. For instructions, see Embed fonts for consistent text. For legibility, use 10-point or larger type when specifying this option.

Rotation Allows you to rotate individual characters. Specifying rotation for fonts that do not contain vertical layout information can give undesirable results.

Rotation can have the following values:

- 0° - Forces all characters to have no rotation.

- 270° - The primary use for 270-° rotation is Roman text with Vertical orientation. If used on other types of text, such as Vietnamese and Thai, this setting can give undesirable results
- Auto - Specifies a 90 degrees counter-clockwise rotation for full width and wide characters only, as determined by the Unicode properties of the character. This value is typically used with Asian text to rotate only those characters that require rotation. This rotation is applied only in vertical text to return full width and wide characters to a vertical orientation without affecting other characters.

Underline Places a horizontal line beneath the characters.

Strikethrough Places a horizontal line through the center of the characters.

Superscript Moves the characters slightly above the normal line of type and reduces the character size. Superscript can also be applied using the Baseline Shift menu in the Advanced Character section of the TLF Text Property inspector.

Subscript Moves the characters slightly below the normal line of type and reduces the character size. Subscript can also be applied using the Baseline Shift menu in the Advanced Character section of the TLF Text Property inspector.

The Advanced Character section contains the following properties:

Link Use this field to create a text hyperlink. Enter the URL to load when the characters are clicked in the published SWF file at runtime.

Target Used with the link property to specify the window the URL loads into. Target can have these values:

- _self - specifies the current frame in the current window.
- _blank - specifies a new window.
- _parent - specifies the parent of the current frame.
- _top - specifies the top-level frame in the current window.
- Custom - You can enter any custom string value you want into the Target field. You would do this in cases where you know the custom name of a browser window or frame that will already be open when your SWf file is playing.

Case Allows you to specify how capital and lower-case characters are used. Case can have these values:

- Default: Uses each character's default typographic case.
- Uppercase: Specifies that all characters use uppercase glyphs.
- Lowercase: Specifies that all characters use lowercase glyphs.
- Caps to Small Caps: Specifies that all capitalized characters use small uppercase glyphs. This option requires that the selected font contains small caps glyphs. Adobe Pro fonts typically have these glyphs defined.
- Lowercase to Small Caps: Specifies that all lowercase characters use small uppercase glyphs. This option requires that the selected font contains small caps glyphs. Adobe Pro fonts typically have these glyphs defined.

Hebrew and Perso-Arabic scripts such as Arabic do not distinguish between upper and lower case and are not affected by this setting.

Digit Case Lets you specify which numeral style to apply when working with OpenType fonts that offer both lining and old style numerical figures. Digit Case can have these values:

- Default: Specifies default digit case. The results are font-dependent; characters use the settings specified by the font designer without any features applied.
- Lining: Lining (or "aligning") figures are all-cap height and typically monospaced in text faces so that they line up vertically on charts.

- Old Style: old style figures have what is considered to be a traditional, classic look. They are only available for certain typefaces, sometimes as the regular numerals in a font, but more often within a supplementary or expert font. The figures are proportionately spaced, eliminating the white spaces that result from monospaced lining figures, especially around the numeral one. Old style figures are most often used within text. Unlike lining figures, they blend in without disturbing the visual line of the body copy. They also work well in headlines since they're not as intrusive as lining figures. Many typographic designers prefer them for most uses except charts and tables.

Digit Width Lets you specify whether to use proportional or tabular numerals when working with OpenType fonts that offer both lining and old style numerical figures. Digit Width can have these values:

- Default: Specifies default digit width. Results are font-dependent; characters use the settings specified by the font designer without any features applied.
- Proportional: Specifies proportional figures. Display typefaces usually contain proportional figures. The total character widths of these figures are based on the width of the numeral itself plus a small amount of white space around it. For example, an 8 takes up more width than a 1. Proportional figures can be either lining or old style. Proportional figures don't align vertically and are unsuitable for use in tables, charts, or other vertical columns.
- Tabular: Specifies tabular figures. Tabular numerals are numeric characters that each have the same total character width. The character width is the width of the numeral itself plus the white space on both sides. Tabular spacing (also called monospacing) allows numerals to align vertically in tables, financial statements, and other columns of figures. Tabular figures are usually lining figures, meaning that they sit on the baseline and have the same height as the capital letters.

Dominant Baseline Available only when Asian options are turned on in the panel options menu of the Text Property inspector. Specifies the dominant (or primary) baseline for text that you explicitly select (as opposed to Leading Basis, which determines the baseline alignment of an entire paragraph). Dominant Baseline can have these values:

- Auto: Resolved based on the selected Locale. This setting is the default.
- Roman: For text, the font and point size of the text determine this value. For graphic elements, the bottom of the image is used.
- Ascent: Specifies an ascent baseline. For text, the font and point size of the text determine this value. For graphic elements, the top of the image is used.
- Descent: Specifies a descent baseline. For text, the font and point size of the text determine this value. For graphic elements, the bottom of the image is used.
- Ideographic Top: Aligns the small characters in a line to the specified position of the large character's embox.
- Ideographic Center: Aligns the small characters in a line to the specified position of the large character's embox.
- Ideographic Bottom: Aligns the small characters in a line to the specified position of the large character's embox.

Alignment Baseline Available only when Asian options are turned on in the panel options menu of the Text Property inspector. Lets you specify a different baseline for text or a graphic image within a paragraph. For example, if you insert an icon into a line of text, you can specify an alignment using the top or bottom of the image relative to the text baseline.

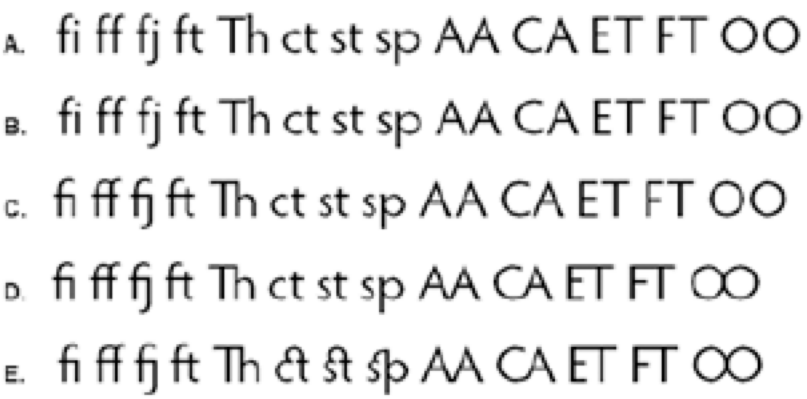
- Use Dominant: Specifies that the Alignment Baseline use the Dominant Baseline setting.
- Roman: For text, the font and point size of the text determine this value. For graphic elements, the bottom of the image is used.
- Ascent: Specifies an ascent baseline. For text, the font and point size of the text determine this value. For graphic elements, the top of the image is used.
- Descent: Specifies a descent baseline. For text, the font and point size of the text determine this value. For graphic elements, the bottom of the image is used.
- Ideographic Top: Aligns the small characters in a line to the specified position of the large character's embox.

- Ideographic Center: Aligns the small characters in a line to the specified position of the large character's embox.
- Ideographic Bottom: Aligns the small characters in a line to the specified position of the large character's embox. This setting is the default.

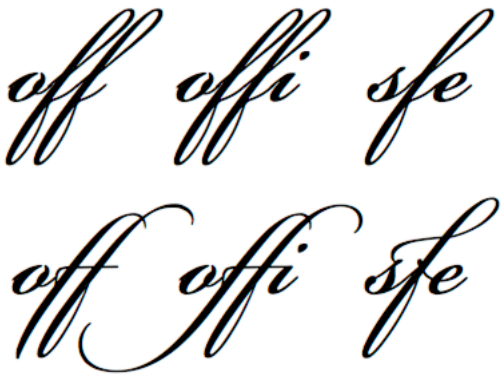
Ligatures Ligatures are typographic replacement characters for certain letter pairs, such as "fi" and "fl" that are available in some fonts. Ligatures usually replace consecutive characters sharing common components. They are part of a more general class of glyphs called contextual forms. With contextual forms, the specific shape of a letter depends on context, such as surrounding letters or proximity to the end of a line. Note the Ligatures setting has no effect on scripts where ligatures or connections between letters are the norm and are not font-dependent. These scripts include Perso-Arabic, Devanagari, and some others.

The Ligatures property can have these values:

- Minimum: Minimum ligatures.
- Common: Common or “standard” ligatures. This setting is the default.
- Uncommon: Uncommon or “discretionary” ligatures.
- Exotic: Exotic or “historical” ligatures. Included in only a few font families.


A. fi ff fj ft Th ct st sp AA CA ET FT OO
B. fi ff fj ft Th ct st sp AA CA ET FT OO
C. fi ff fj ft Th ct st sp AA CA ET FT OO
D. fi ff fj ft Th ct st sp AA CA ET FT OO
E. fi ff fj ft Th ct st sp AA CA ET FT OO

A. No ligatures applied B. Minimum ligatures C. Common ligatures D. Uncommon ligatures E. Exotic ligatures



A script-based font with minimum ligatures (top) and common ligatures (bottom).

Break Used to prevent selected words from breaking at the end of lines, such as proper names or words that could be misread when hyphenated. The Break setting is also used to keep multiple characters or groups of words together, such as clusters of initials, or a first and last name. Break can have these values:

- Auto: Line break opportunities are based on the Unicode character properties in the font. This setting is the default.
- All: Treats all characters in the selection as mandatory line break opportunities.
- Any: Treats any character in the selection as a line break opportunity.
- No Break: Treats no characters in the selection as line break opportunities.

Baseline Shift This control sets the Baseline Shift in percent or pixels. Positive values move the character's baseline below the baseline of the rest of the line; negative values move it above the baseline. The Superscript or Subscript attribute can also be applied from this menu. The default is 0. The range is +/- 720 points or percent.

Locale As a character property, the selected locale affects the shaping of glyphs via OpenType features in a font. For example, languages like Turkish do not have ligatures such as fi and ff. Another example is the capital version of 'i' in Turkish, which is an uppercase i with a dot and not 'I'.

A separate flow-level Locale property is available in the Container and Flow section of the TLF Text Property inspector. All characters inherit the Container and Flow Locale property unless it is set differently at the character level.

Working with paragraph styles

To set paragraph styles, you work with the Paragraph and Advanced Paragraph sections of the Text Property inspector.

The Paragraph section includes the following text properties:

Align This property can be used with horizontal or vertical text. Align to Start aligns the text along the starting edge of the container (the left side for left-to-right text). Align to End aligns the text along the ending edge of the container (the right side for left-to-right text).

When the Paragraph Direction of the current selection is right to left, the appearance of the alignment icons reverses to indicate the correct direction.

Margins: Start and End These settings specify the width of the left and right margins in pixels. The default is 0.

Indent Specifies the indentation of the first word of the selected paragraph, in pixels.

Spacing: Before and After Specifies pixel values for space before and after a paragraph.

Note: Unlike traditional page layout applications, the vertical space specified between paragraphs collapses when values overlap. For example, you have two paragraphs, Para1 followed by Para2. Para1 has 12 pixels of space after it (Space After), and Para2 has 24 pixels of space before it (Space Before). TLF produces 24 points between the paragraphs, not 36. If a paragraph begins at the top of a column, no extra space is added before the paragraph. In this case, you can use the first baseline offset options of the paragraph.

Text Justify Text Justify: Indicates how justification is applied to text. Text Justify can have these values:

- Letter Spacing: Distributes justification between letters.
- Word Spacing: Distributes justification between words. This setting is the default.

Direction Specifies paragraph direction. Direction settings are only available if Right-to-Left options are turned on in Preferences. This setting applies only to the currently selected paragraph within the text container. A separate Direction property can be set for the container in the Container and Flow section of the TLF Text Property inspector. Direction can have these values:

- Left to Right: Left to Right text direction. Used for most languages. This setting is the default.
- Right to Left: Right-to-Left text direction. Used for Middle Eastern languages like Arabic and Hebrew, and languages based on Arabic script such as Farsi or Urdu.

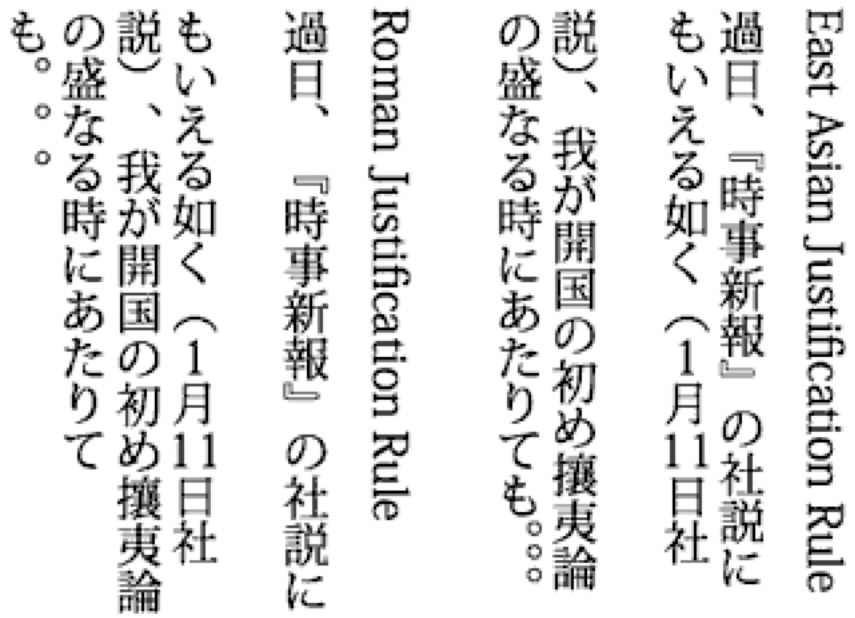
The Advanced Paragraph options are only available when Asian Options are turned on in Preferences or via the Options menu of the TLF Text Property inspector.

The Advanced Paragraph section includes the following properties:

Mojikumi Sometimes called the justification rule, this property determines how paragraph justification is applied. The justifiers that are applied based on this setting affect the spacing of punctuation and the leading. In the Roman version, the comma and Japanese periods take a full character's width but only half in East Asian. Also, the spacing between sequential punctuation marks becomes tighter, obeying traditional East Asian typographic conventions. Another item to note in the example below is the leading, applied to the second line of the paragraphs. In the East Asian version, the last two lines push left. In the Roman version, the second and following lines push left.

Mojikumi can have these values:

- Auto: Justification is applied based on the Locale selected in Character and Flow section of the Text Property inspector. This setting is the default.
- Space: Use Roman justification rules.
- East Asian: Use East Asian justification rules.



Paragraphs with Roman (left) and East Asian (right) justification rules.

Kinsoku Shori Type Sometimes called the justification style. This property specifies options for handling Japanese kinsoku characters, which cannot appear at either the beginning or end of a line. Kinsoku Shori Type can have these values:

- Auto: Resolved based on the Locale selected in the container and Flow section of the Text Property inspector. This setting is the default.
- Prioritize Least Adjustment: Bases justification on either expanding or compressing the line, whichever gives a result closest to the desired width.
- Push In Kinsoku: Bases justification on compressing kinsoku at the end of the line. Kinsoku expands if no kinsoku occurs or if that end-of-line space is insufficient.
- Push Out Only: Bases justification on expanding the line.

Leading Model Leading Model is a paragraph format composed of allowed combinations of leading basis and leading direction.

Leading Basis determines the baselines of two consecutive lines that are intended to be at the distance specified by line height from each other. For example, for two consecutive lines in a paragraph with Roman leading basis, the line height is the distance between their respective Roman baselines.

Leading Direction determines the direction in which line height is measured. If leading direction is Up, line height is the distance of a line's baseline from the previous line's baseline. If leading direction is Down, line height is the distance of a line's baseline from the next line's baseline.

Leading Model can have these values:

- Roman; Up: Leading basis is Roman and leading direction is Up. In this case, the line height is the distance of a line's Roman baseline from the previous line's Roman baseline.
- Ideographic Top; Up: Leading basis is Ideographic Top and leading direction is Up. In this case, the line height is the distance of a line's Ideographic Top baseline from the previous line's Ideographic Top baseline.

- Ideographic Center; Up: Leading basis is Ideographic Center and leading direction is Up. In this case, the line height is the distance of a line's Ideographic Center baseline from the previous line's Ideographic Center baseline.
- Ideographic Top; Down: Leading basis is Ideographic Top and leading direction is Down. In this case, the line height is the distance of a line's Ideographic Top baseline from the next line's Ideographic Top baseline.
- Ideographic Center; Down: Leading basis is Ideographic Center and leading direction is Down. In this case, the line height is the distance of a line's Ideographic Center baseline from the next line's Ideographic Center baseline.
- Auto: The Leading Model is resolved based on the Locale selected in the Container and Flow section of the Text Property inspector. (Ideographic Top; Down for Japanese, Chinese and Roman; Up for all others). This setting is the default value.

Container and flow properties

Working with Container and Flow properties

The container and Flow section of the TLF Text Property inspector controls options that affect the entire text container. These properties include:

Behavior This option controls how the container expands as the amount of text increases. Behavior has these options:

- Single Line
- Multiline: This option is only available when the selected text is area text. It is not available if the selected text is point text.
- Multiline No Wrap
- Password: Makes characters appear as dots instead of letters for password security. This option is only available in the menu when the text type is Editable (for either point or area text). It is not available for the Read Only or Selectable text types.

Max Chars The maximum number of characters to allow in the text container. Enabled only for text containers whose type is set to Editable. The maximum value is 65535.

Alignment Specifies the alignment of text within the container. Settings include:

- Top: Vertically aligns text down from the top of the container.
- Center: Centers lines of text in the container
- Bottom: Vertically align lines of text up from the bottom of the container.
- Justify: Evenly distributes lines of text vertically between the top and bottom of the container.

Note:

The Alignment options change appropriately when the text direction is set to Vertical.

Column Count Specifies the number of columns of text within the container. This property is only enabled for area text containers. The default value is 1. The maximum value is 50.

Column Gutters Specifies the spacing (or gutter) between each column in the selected container. The default value is 20. The maximum value is 1000. The unit of measurement is set according to the Ruler Units set in Document Settings.

Padding Specifies the width of the margins between the text and the selected container. Padding can be set for all 4 margins.

Border Color The color of the stroke around the outside of the container. The default is no border.

Border width The width of the stroke around the outside of the container. Enabled only when a border color is chosen. The maximum value is 200.

Background Color The color of the background behind the text. The default is no color.

First Line Offset specifies the alignment of the first line of text with the top of the text container. For example, you can make text fall a specific distance below the top of the container. First line offset is often referred to as first baseline offset when working with Roman characters. In this case, the baseline is an imaginary line on which the majority of the characters in a typeface rest. When working with TLF, baseline can refer to any of the following, depending on the language being used: Roman, Ascent, Descent, Ideographic Top, Ideographic Center, and Ideographic Bottom.

First Line Offset can have these values:

- pt: Specify the distance in points between the baseline of the first line of text and the top inset of the frame. This setting enables a field for specifying the point distance.
- Auto: Aligns the top of the line, based on the tallest glyph, with the top of the container.
- Ascent: The distance between the top inset of the text container and the baseline of the first line of text is the height of the tallest glyph in the font (typically the "d" character in Roman fonts).
- Line Height: The distance between the top inset of the text container and the baseline of the first line of text is the Line Height (leading) of the line.

Direction Used to specify either a left-to-right or right-to-left text direction for the selected container. Left-to-right is used for most languages. Right-to-left is used for Middle Eastern languages such as Arabic and Hebrew, and languages based on Arabic script such as Farsi or Urdu.

When applied at the paragraph level, direction controls the left-to-right or right-to-left text direction and the indents and punctuation used by the paragraph. When applied at the container level, direction controls the column direction. Paragraphs in the container inherit the direction attribute from the container.

Locale Sets the Locale property at the flow level. See Working with character styles.

Flowing text across multiple containers

Threading, or linking, between text containers is only available for TLF (Text Layout Framework) text and does not apply to Classic text blocks. Text containers can be threaded from frame to frame, and inside symbols, as long as the threaded containers are all within the same timeline.

To link 2 or more text containers:

1. Use the Selection tool or Text tool to select a text container.
2. Click the In port or the Out port of the selected text container. (The In-port and Out-port positions on the text container are based on the container's flow direction and vertical or horizontal setting. For example, if the text flow is Left-to-Right and horizontal, the In port is on the upper left and the Out port is on the lower right. If the text flow is Right-to-Left, the In port is on the upper-right and the Out port is on the lower left.)

   The pointer changes to the loaded text icon.
3. Then do one of the following:
   - To link to an existing text container, position the pointer over the target text container. Click the text container to link the two containers.
   - To link to a new text container, click or drag on an empty part of the Stage. Clicking creates an object of the same size and shape as the original; dragging lets you create a rectangular text container of any size. You can also add a new container between 2 linked containers.

   The containers are now linked and text can flow between them.

To unlink two text containers, do one of the following:

- Place the container in edit mode and then double-click the In-port or Out-port that you want to unlink. The text reflows in the first of the two containers.
- Delete one of the linked text containers.

Note:

After creating a linkage, the second text container acquires the flow direction and locale of the first container. After unlinking, these settings persist in the second container instead of reverting to their pre-linkage settings.

Making text scrollable

You can make a TLF text container scrollable by adding a UIScrollBar component to the text container. The text container must have the following settings:

- The Text Type must be set to Editable or Selectable.
- The Container and Flow Behavior must be set to Multiline or Multiline No Wrap.

Make a TLF text container scrollable:

- Drag an instance of the UIScrollBar component from the Components Panel onto the text container, closest to the side of the container where you want to attach it.

  The UIScrollBar component snaps to the side of the text container.

Make a text container scroll horizontally:

1. Select the UIScrollBar component instance on the Stage.
2. Set the Direction of the UIScrollBar component to Horizontal in the Component Parameters section of the Property Inspector.
3. Drag the UIScollBar component instance to the top or bottom of the text container.

   The UIScrollBar component snaps to the top or bottom of the text container.

Using tab rulers (CS5.5 only)

You use the tab ruler to add tab stops to TLF text containers. The tab ruler appears when a TLF text container is in edit mode. The tab ruler displays tab stops defined for the currently selected paragraphs. It also shows markers for paragraph margins and first-line indent.

Hide or show tab ruler Choose Text > TLF Tab Ruler.

Set type of tab Double-click a marker or Shift-click several markers and select a type from the menu.

Start, Center, or End tab Aligns the start, end, or center of the text to the tab stop.

Decimal tab Aligns a character in the text to the tab stop. This character is usually a decimal point, shown by default in the menu. To align to a dash or other character, enter it in the menu.

Add tab Click in the tab ruler. The tab marker appears at that location in the tab ruler.

Move tab Drag the tab marker to a new location. (To move it precisely, double-click its tab marker and enter a pixel location for the marker.)

Delete tab Drag its marker downward off the tab ruler until it disappears. (If the text is vertically aligned, drag the marker to the left, toward the text, until it disappears.)

Change unit of measure Choose **Modify > Document**. Then select a unit from the Ruler Units menu in the dialog box.

Asian and right-to-left text

Creating Asian text

To work with properties that apply to Asian text, enable the Asian Text options by doing one of the following:

- Choose Show Asian Options from the panel options menu in the Property inspector while TLF text is selected on the Stage.
- Select Show Asian Text Options in the Text section of Preferences (Edit > Preferences).

The Asian text properties include:

- Tate Chu Yoko: used in combination with Asian text where Roman characters must be rotated to a horizontal orientation to display properly in a vertical layout.

Roman characters in vertical text without Tate Chu Yoko rotation (left) and with Tate Chu Yoko (right)

- Dominant Baseline
- Alignment Baseline
- Mojikumi
- Kinsoku Shori Type
- Leading Model

Working with Illustrator AI files in Animate CC

About Adobe Illustrator AI files

Animate lets you import Adobe® Illustrator® AI files and preserves the majority of the editability and visual fidelity of your artwork. The AI Importer also provides you with a great degree of control in determining how your Illustrator artwork is imported into Animate, letting you specify how to import specific objects into an AI file.

The Animate AI Importer provides the following key features:

- Preserves editability of the most commonly used Illustrator effects as Animate filters.
- Preserves editability of blend modes that Animate and Illustrator have in common.
- Preserves the fidelity and editability of gradient fills.

- Maintains the appearance of RGB (red, green, blue) colors.
- Imports Illustrator Symbols as Animate Symbols.
- Preserves the number and position of Bezier control points.
- Preserves the fidelity of clip masks.
- Preserves the fidelity of pattern strokes and fills.
- Preserves object transparency.
- Converts the AI file layers to individual Animate layers, keyframes, or a single Animate layer. You can also import the AI file as a single bitmap image, in which case Animate flattens (rasterizes) the file.
- Provides an improved copy-and-paste workflow between Illustrator and Animate. A copy-and-paste dialog box provides settings to apply to AI files being pasted onto the Animate stage.

Compatibility between Animate and Illustrator

Certain visual attributes can either not be accurately imported, or, after they are imported, lose their ability to be further edited in the Animate authoring environment. The AI Importer provides you with several options to import and place artwork to best maintain its visual appearance and editability. However, certain visual attributes cannot be preserved. Use the following guidelines to improve the appearance of AI files imported into Animate:

- Animate supports only the RGB color space, and not the CMYK color space, which is common in printing. Animate can convert CMYK images to RGB, however, colors are better preserved if you convert the colors to RGB in Illustrator.
- To preserve the drop shadow, inner glow, outer glow, and Gaussian blur AI effects as editable Animate filters, Animate imports the objects to which they are applied as a Animate movie clip. If you attempt to import an object with these attributes as something other than a movie clip, Animate displays an incompatibility alert, and recommends importing the object as a movie clip.

Working with Illustrator and Animate

You can move Illustrator artwork into the Animate editing environment or directly into Flash Player. You can copy and paste artwork, save files in SWF format, or export artwork directly to Animate. In addition, Illustrator provides support for Animate dynamic text and movie clip symbols.

Pasting Illustrator artwork

You can create graphically rich artwork in Illustrator and copy and paste it into Animate simply, quickly, and seamlessly.

When you paste Illustrator artwork into Animate, the following attributes are preserved:

- Paths and shapes
- Scalability
- Stroke weights
- Gradient definitions
- Text (including OpenType fonts)
- Linked images
- Symbols
- Blending modes

In addition, Illustrator and Animate support pasted artwork in the following ways:

- When you select entire top-level layers in Illustrator artwork and paste them into Animate, the layers are preserved along with their properties (visibility and locking).
- Non-RGB Illustrator colors (CMYK, grayscale, and custom) convert to RGB in Animate. RGB colors paste as expected.
- When you import or paste Illustrator artwork, you can use various options to preserve effects (such as drop shadow on text) as Animate filters.
- Animate preserves Illustrator masks.

Exporting SWF files from Illustrator

From Illustrator, you can export SWF files that match the quality and compression of SWF files exported from Animate.

When you export, you can choose from a variety of presets to ensure optimal output, and you can specify how to handle multiple artboards, symbols, layers, text, and masks. For example, you can specify whether Illustrator symbols are exported as movie clips or graphics, or you can choose to create SWF symbols from Illustrator layers.

Importing Illustrator files into Animate

When you want to create complete layouts in Illustrator and then import them into Animate in one step, you can save your artwork in the native Illustrator format (AI) and import it, with high fidelity, into Animate using the File > Import To Stage or File > Import To Library commands in Animate.

If your Illustrator file contains multiple artboards, you select the artboard you want to import from the Import dialog box in Animate, and specify settings for in that artboard for all layers. All objects on the selected artboard can be imported as a single or multiple animate layers or keyframes in Animate.

When you import Illustrator artwork as an AI, EPS, or PDF file, Animate preserves the same attributes as for pasted Illustrator artwork. In addition, when an imported Illustrator file contains layers, you can import them in any of the following ways:

- Convert Illustrator layers to Animate layers
- Convert Illustrator layers to Animate frames
- Convert all Illustrator layers to a single Animate layer

Symbol workflow

Symbol workflow in Illustrator is similar to symbol workflow in Animate.

Text Conversion If the AI file contains Text, you can convert the text to:

- Editable Text
- Vector Outline
- Flattened bitmap image

Layer Conversion Animate CC allows you to convert layers in the imported AI file to:

- Single flattened bitmap file
- Editable paths and effects

(Flash Professional CS6 and earlier versions only) Symbol properties and links Using the Symbols panel or the Control panel, you can easily assign names to symbol instances, break links between instances and symbols, swap a symbol instance with another symbol, or create a copy of the symbol. In Animate, the editing features in the Library panel work in a similar way.

(Flash Professional CS6 and earlier versions only) Static, dynamic, and input text objects

When you bring static text from Illustrator into Animate, Animate converts the text to outlines. In addition, you can set up your text in Illustrator as dynamic text. Dynamic text enables you to edit text content programmatically in Animate, and easily manage projects that require localization in multiple languages.

In Illustrator, you can specify individual text objects as static, dynamic, or input text. Dynamic text objects in Illustrator and Animate have similar properties. For example, both use kerning that affects all characters in a text block rather than individual characters, both anti-alias text the same way, and both can be linked to an external XML file containing text.

About importing AI files to the Animate library

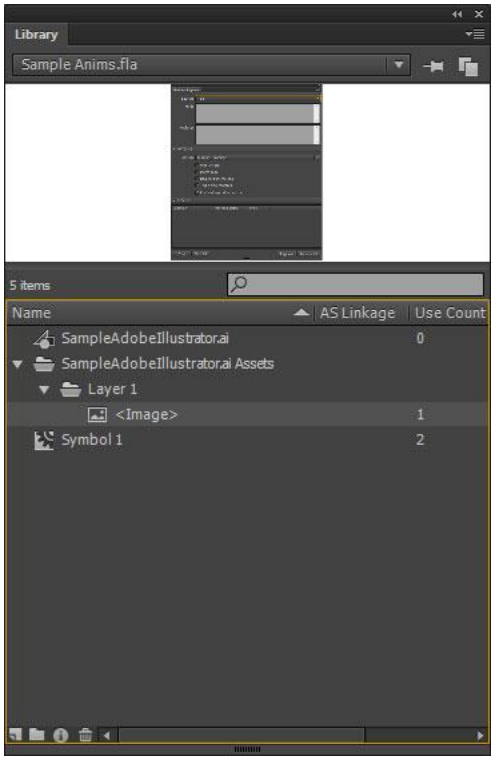
Importing an AI file into the library is similar to importing to the Stage, the difference being that the entire AI file is encapsulated as a Animate symbol. The content is imported into the library and organized by the layering and grouping structure of the AI file.

When you import an AI file into the library, the root folder uses the name of the AI file. After the AI file is imported into the library, you can change the name of the root folder, or move the layers out of the folder.

note: The Library panel orders the contents of the imported AI file alphabetically. The hierarchical grouping and folder structure remains the same, but the library reorders them alphabetically.

When converting AI layers to keyframes, the AI file is imported as a movie clip; converting the AI layers to Flash layers, or as a single Flash layer, imports the AI file as a graphic symbol. The resulting movie clip or graphic symbol contains all of the content of the AI file imported to its timeline, as if the content were imported to the Stage. Almost all movie clips have a bitmap or other asset associated with them. To minimize confusion and naming conflicts, these assets are stored in an Assets folder in the same folder as the movie clip.

note: When you import to the library, the AI file's contents are imported to the movie clip's timeline, not the main Animate timeline.



The Library panel after importing an AI file

(Flash Professional CS6 and earlier versions only) AI File Importer preferences

The Animate Preferences dialog box lets you set import preferences for AI files and the AI File Import dialog box. The preferences you specifiy for importing AI files affect the options the AI Import dialog box is initially populated with for the Illustrator object types.

Note:

To override the preferences specified for different layer types on an object by object basis, use the AI Import dialog box. Select the layer, object, or group to change its import options, and specify the necessary options.

General Preferences that affect how the AI Importer will respond when importing AI files:

Show Import Dialog Box Specifies that the AI File Import dialog box appears.

Exclude Objects Outside Crop Area Excludes objects on the Illustrator canvas which fall outside the artboard or crop area.

Import Hidden Layers Specifies that hidden layers be imported by default.

Import Text As Lets you specify the following import preferences for text objects:

Editable Text Specifies that imported Illustrator text is editable Animate Pro text. The appearance of the text may be compromised to maintain the editability of the text.

Vector Outlines Converts text to vector paths. Use this option to preserve the visual appearance of the text. Some visual effects might be sacrificed—such as unsupported blend modes and filters—but visual attributes such as text on a path are maintained if the text is imported as a movie clip. The text itself is no longer editable, but opacity and compatible blend modes maintain their editability.

note: To preserve the drop shadow, inner glow, outer glow, and Gaussian blur that AI effects applied to text as editable Animate filters, select Create Movie Clip Import to import the text as a movie clip.

Bitmaps Rasterizes the text into a bitmap to preserve the exact appearance of the text as it was in Illustrator. If filters or other effects are applied that are not compatible with Animate, importing the text as a bitmap preserves the visual appearance. Rasterized text is no longer editable.

Create Movie Clips Specifies that text objects be imported inside a movie clip. To maintain supported blend modes, AI effects, and transparency of less than 100% between Illustrator and Animate, specify that the text object be imported as a movie clip.

Import Paths As Lets you specify the following path import preferences:

Editable Paths Creates an editable vector path. Supported blend modes, effects, and object transparency are preserved, but attributes not supported in Animate are discarded.

Bitmaps Rasterizes the path into a bitmap to preserve the exact appearance of the path in Illustrator. A rasterized image is no longer editable.

Create Movie Clips Specifies that path objects be imported inside a movie clip.

Images Lets you specify the import preference for images:

Flatten Bitmaps To Maintain Appearance Rasterizes the image into a bitmap to preserve the appearance of blending modes and effects that are not supported in Animate. A rasterized image is no longer editable.

Create Movie Clips Specifies that images be imported inside a movie clip.

Groups Lets you specify the import preferences for groups:

Import As Bitmaps Rasterizes the group into a bitmap to preserve the appearance of the objects as they appeared in Illustrator. After a group is converted to a bitmap, the objects in it cannot be selected or renamed.

Create Movie Clips Specifies that all objects in the group be encapsulated into a single movie clip.

Layers Lets you specify the import preferences for layers:

Import As Bitmaps Rasterizes the layer into a bitmap to preserve the appearance of the objects as they appeared in Illustrator.

Create Movie Clips Specifies that the layer is encapsulated into a movie clip.

Movie Clip Registration Specifies a global registration point for movies that are created. This setting applies to the registration point for all object types. This option can be changed on an object by object basis in the AI File Import dialog box; this is the initial setting for all object types. For more information on movie clip registration, see Edit symbols.

Import Adobe Illustrator files

When you want to create complete layouts in Illustrator and then import them into Animate in one step, you can save your artwork in the native Illustrator format (AI) and import it, with high fidelity, into Animate using the File > Import To Stage or File > Import To Library commands in Animate.

If your Illustrator file contains multiple artboards, you select the artboard you want to import from the Import dialog box in Animate, and specify settings for in that artboard for all layers. All objects on the selected artboard can be imported as a single or multiple flash layers or keyframes in Animate.

When you import Illustrator artwork as an AI, EPS, or PDF file, Animate preserves the same attributes as for pasted Illustrator artwork. In addition, when an imported Illustrator file contains layers, you can import them in any of the following ways:

- Convert Illustrator layers to Flash layers
- Convert Illustrator layers to Flash frames
- Convert all Illustrator layers to a single Flash layer

Symbol workflow

Symbol workflow in Illustrator is similar to symbol workflow in Animate.

Text Conversion

If the AI file contains Text, you can convert the text to:

- Editable Text
- Vector Outline
- Flattened bitmap image

Layer Conversion

Animate CC allows you to convert layers in the imported AI file to:

- Single flattened bitmap file
- Editable paths and effects

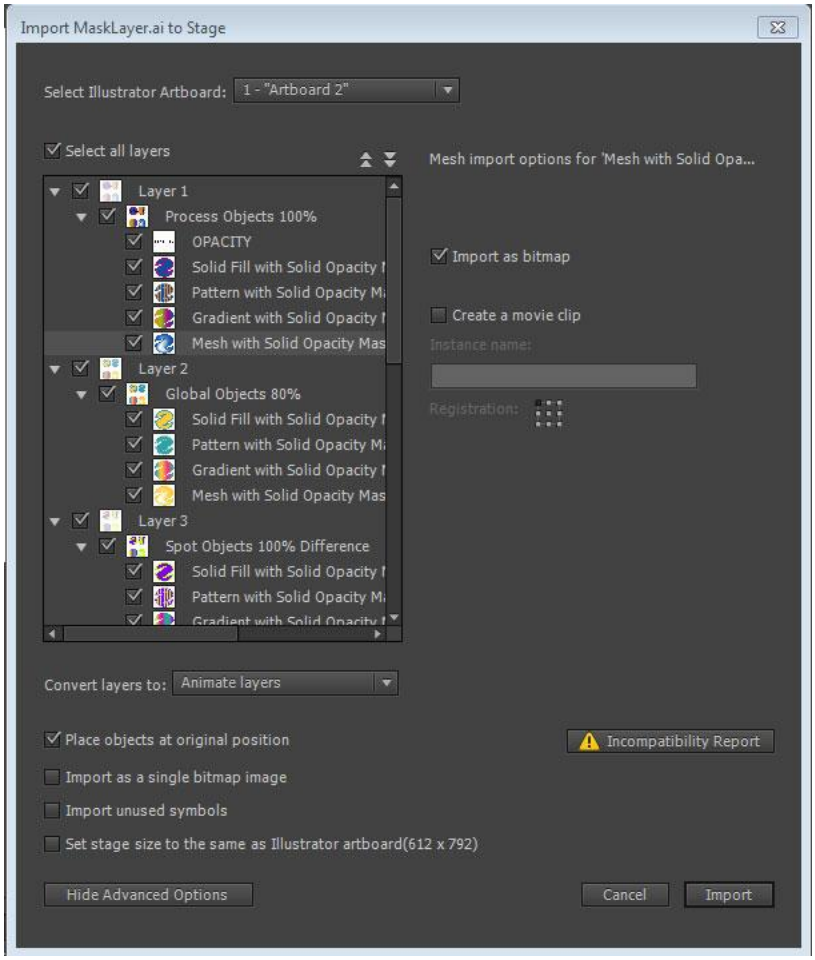
(Flash Professional CS6 and earlier versions only) Symbol properties and links

Using the Symbols panel or the Control panel, you can easily assign names to symbol instances, break links between instances and symbols, swap a symbol instance with another symbol, or create a copy of the symbol. In Animate, the editing features in the Library panel work in a similar way.

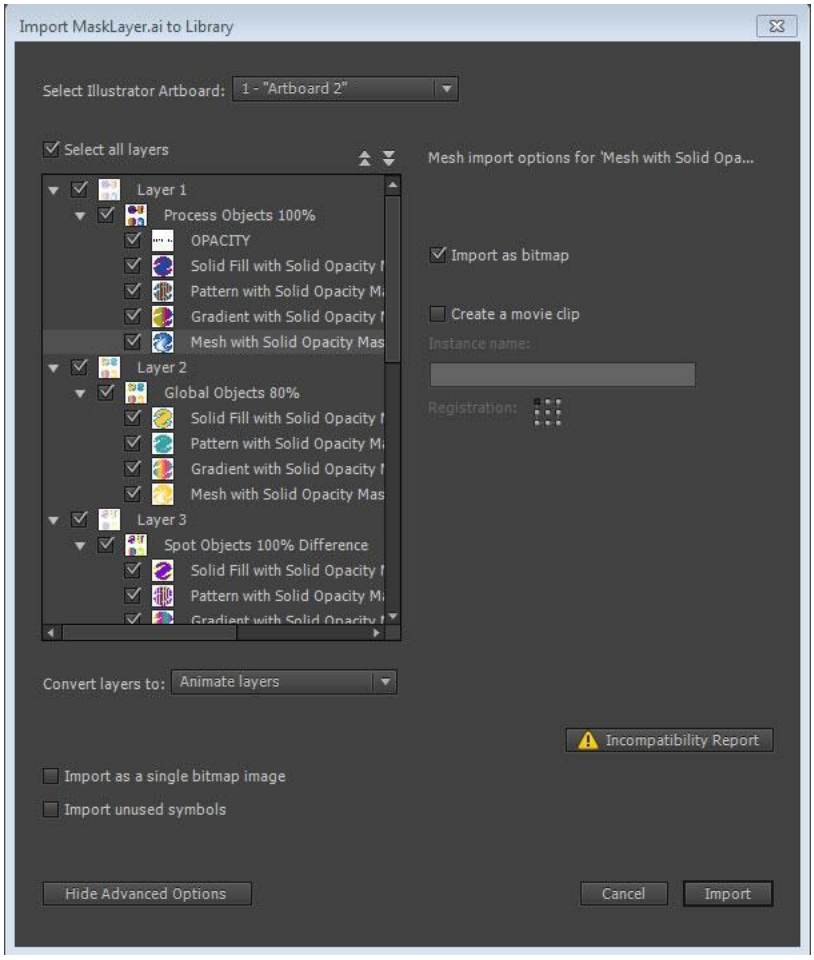
(Flash Professional CS6 and earlier versions only) Static, dynamic, and input text objects

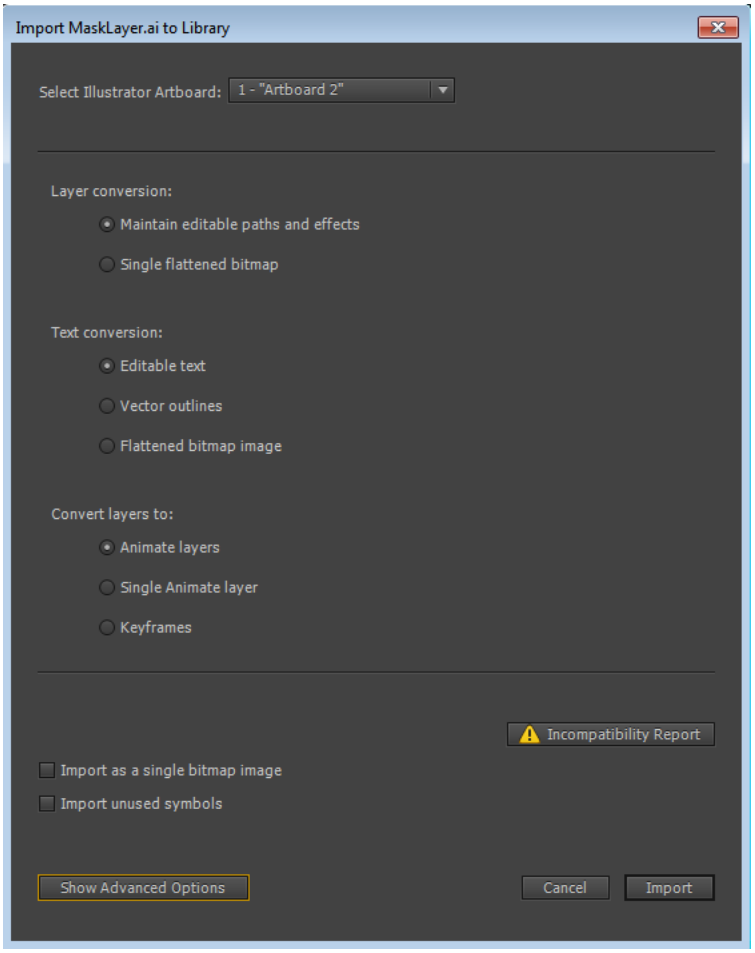
When you bring static text from Illustrator into Animate, Animate converts the text to outlines. In addition, you can set up your text in Illustrator as dynamic text. Dynamic text enables you to edit text content programmatically in Animate, and easily manage projects that require localization in multiple languages.

In Illustrator, you can specify individual text objects as static, dynamic, or input text. Dynamic text objects in Illustrator and Animate have similar properties. For example, both use kerning that affects all characters in a text block rather than individual characters, both anti-alias text the same way, and both can be linked to an external XML file containing text.



AI Import Advanced Options: Stage


Import MaskLayer.ai to Library
Select Illustrator Artboard:
1 - "Artboard 2"
Select all layers
Layer 1
Process Objects 100%
OPACITY
Solid Fill with Solid Opacity
Pattern with Solid Opacity
Gradient with Solid Opacity
Mesh with Solid Opacity
Layer 2
Global Objects 80%
Solid Fill with Solid Opacity
Pattern with Solid Opacity
Gradient with Solid Opacity
Mesh with Solid Opacity
Layer 3
Spot Objects 100% Difference
Solid Fill with Solid Opacity
Pattern with Solid Opacity
Mesh import options for 'Mesh with Solid Opa...
Import as bitmap
Create a movie clip
Instance name:
Registration:
Convert layers to:
Animate layers
Incompatibility Report
Import as a single bitmap image
Import unused symbols
Hide Advanced Options
Cancel
Import



AI Import Advanced Options: Library

Select **File** > **Import To Stage** or **Import To Library**.

1 Navigate to the AI file to import, select it, and click OK. The Import Illustrator Document To Stage or The Import Illustrator Document To Library dialog box appears.

   This dialog box provides options to import the Illustrator file. Depending on the types of objects in the Illustrator file you're importing, the options available to you vary.

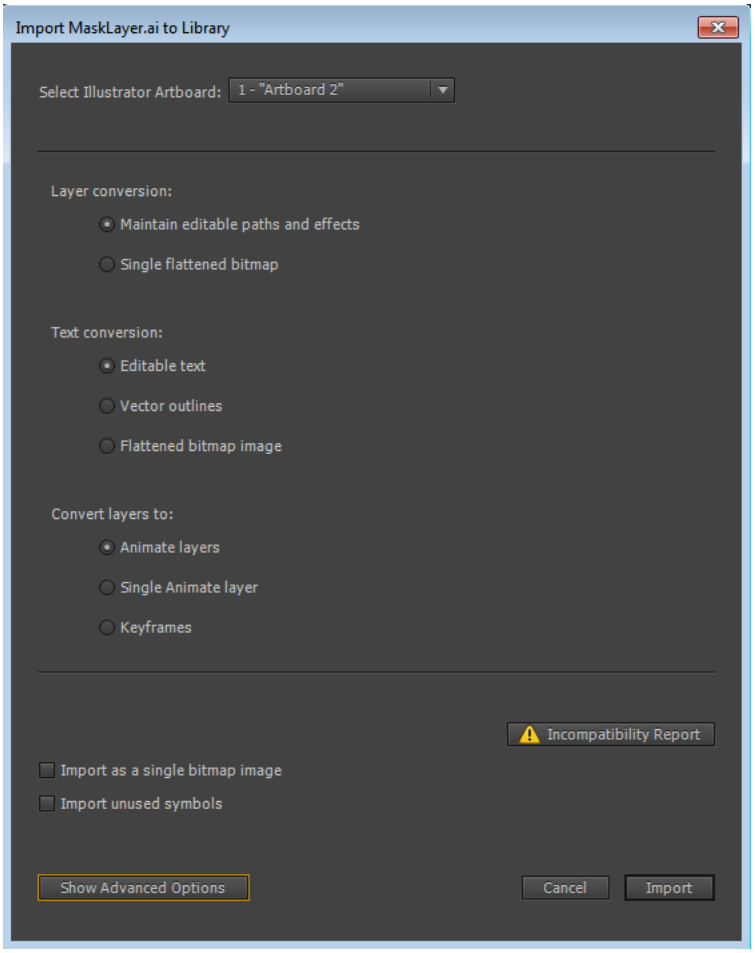
2 (Optional) To generate a list of items in the AI file that are incompatible with Animate, click **Incompatibility Report**. The Incompatibility Report button appears only if incompatibilities exist with Animate in the AI file.

   The incompatibility report analyzes possible incompatibilities between Illustrator and Animate. The Import Options area (next to the Alert button) of the AI Import dialog box displays recommendations to obtain the maximum compatibility for any incompatible item.

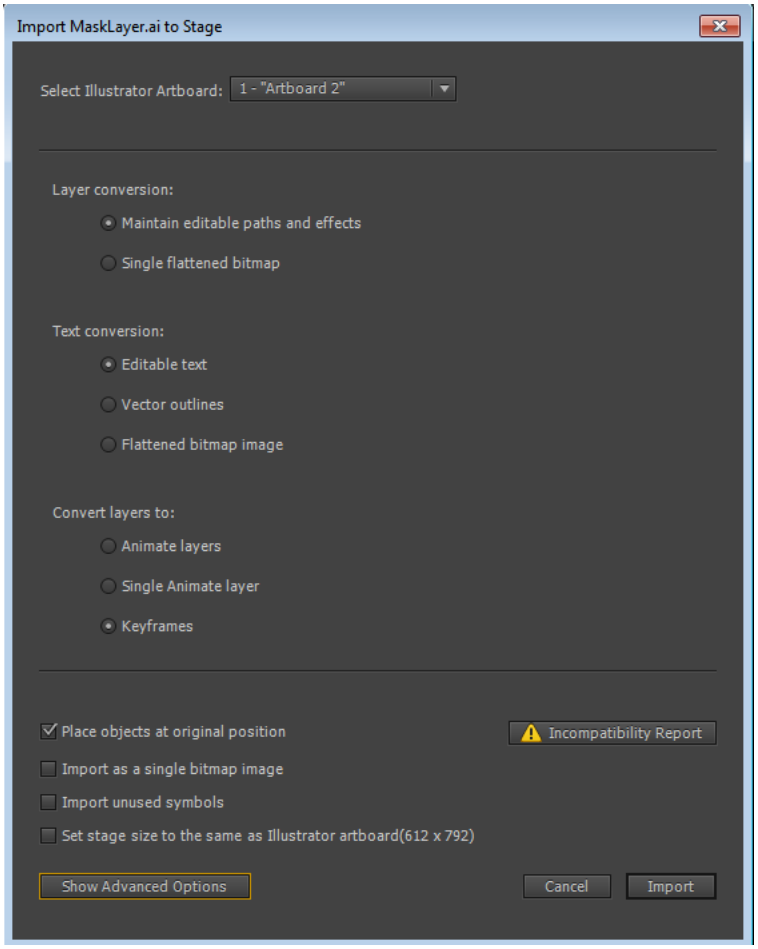
   The incompatibility report includes an Apply Recommended Import Settings checkbox. If checked, Animate automatically applies the recommended import options to any incompatible objects within the AI file. The exceptions to this are when the AI document is larger in size than that supported by Animate, and when the AI document uses the CMYK color mode. To correct either of these incompatibilities, reopen the document in Illustrator CS3, and adjust the size of the document, or change the color mode to RGB.

3 In the Import screen, select the following options:

- **Select Illustrator Artboard:** Lets you select the artboard you want to import.
- **Import as bitmap:** Creates a bitmap of the imported AI asset.c3.
- **Create movie clip:** Specifies that the image layers be converted to movie clips when imported into Animate. This option can be changed in the AI Import dialog box on a layer by layer basis if you do not want all the image layers to be converted to movie clips.
- **Registration:** It lets you set the registration point for your movie clip.
- **Convert layers to Animate layers, Single Animate layers and Keyframes:**
  - **Animate layers:** Selected layers in the Select Photoshop layers list are placed on their own layer. Each layer is labeled with the name of the layer in the Photoshop file.
  - **Single Animate layer:** All the AI layers are placed on a single Animate layer.
  - **Keyframes:** All selected layers in the Select Illustrator layers list are placed in individual keyframes on a new layer.
- **Place objects at original position:** Contents of the AI file retain the exact position that they had in Illustrator. For example, if an object was positioned at X = 100 Y = 50 in Illustrator, it assumes the same coordinates on the Animate Stage. (Not displayed in Import to Library option).
- **Import as single bitmap image:** Flattens the AI layers into a single bitmap.
- **Import unused symbols:** Imports even the unused symbols.
- **Set stage size to the same as Illustrator artboard:** Sets the stage to the size same as that of Illustrator artboard. The dimensions of the selected artboard are also displayed alongside.
- Select **Import** to import the files, **Cancel** to cancel the process and **Hide advanced options** to display the basic options.



AI Basic Options: Library



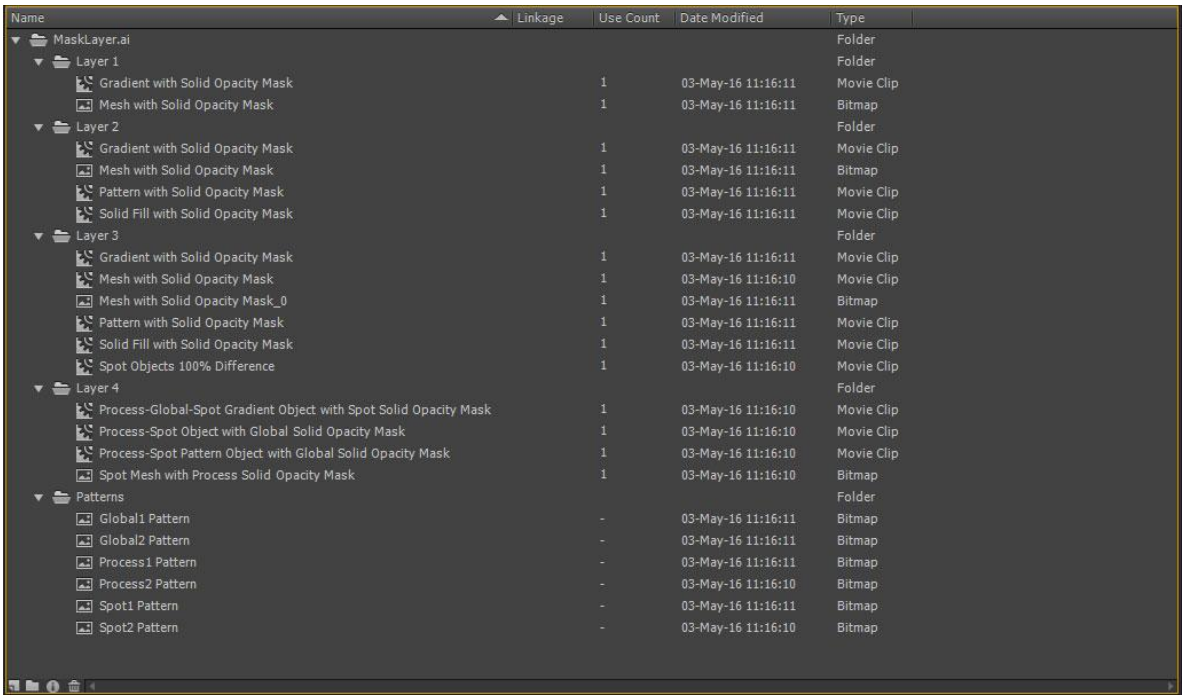
AI Basic Options: Stage

4 In the Basic options, select the options in **Layer conversion, Text conversion and Convert Layers**:

- **Select Illustrator Artboard:** Allows you select the artboard you want to import. When you change the Artboard in the Basic options, the tree layout in Advanced Options are updated according to the selected Artboard.
- **Import as bitmap:** Creates a bitmap of the imported AI asset.
- **Maintain editable paths and effects:** Creates an editable vector shape with a bitmap clipped inside the vector. Supported blend modes, filters, and opacity are maintained.
- **Single flattened image:** Rasterizes the shape into a bitmap to preserve the exact appearance of the shape layer in Illustrator.
- **Editable text:** Creates an editable text object from the text on the selected Illustrator layer. The appearance of the text might be compromised to maintain the edit ability of the text.
- **Vector outlines:** Converts text to vector paths to preserve the visual appearance of the text.
- **Flattened bitmap image:** Rasterizes the text into a bitmap to preserve the exact appearance of the text layer in Illustrator. Rasterized text is no longer editable.
- **Animate layers:** Selected layers in the Select Illustrator layer list are placed on their own layer. Each layer is labeled with the name of the layer in the Illustrator file.

- **Single Animate layer:** All the AI layers are placed on a single Animate layer.
- **Keyframes:** All selected layers in the Select Illustrator layer list are placed in individual keyframes on anew layer.
- **Place objects at original position:** Retains the exact position that they had in Illustrator. For example, if an object was positioned at X = 100 Y = 50 in Illustrator, it assumes the same coordinates on the Animate Stage. (Not displayed in Import to Library option).
- **Import as a single bitmap image:** Flattens the AI layers into a single bitmap.
- **Import unused symbols:** Will import even the unused symbols.
- **Set stage size to the same as Illustrator artboard (612x792):** Sets the stage to that of Illustrator artboard if selected. (Will not be shown in case of Import to Library).

5 Select **Import** to import the files, **cancel** to cancel the process and **Show advanced options** to display the advanced options.



AI Files in the Library

Illustrator object import options

Layers manage all the items that make up Illustrator artwork. By default, all items are organized in a single, parent layer. You can import all items in a given parent layer as a single, flattened bitmap, or, individually select each object and specify import options specific to the type of object it is (text, path, group, and so on). The AI Importer provides options to select layers in the artwork you are importing and specify individual import options based on preserving the visual appearance of an object, or its editability in Animate.

Correcting incompatible graphic effects

1 To generate an incompatibility report, click Incompatibility Report. The incompatibility report lists items in the AI file that are incompatible with Animate.

2 Select Change Import Settings To Resolve Object Incompatibilities. Many incompatibilities between Illustrator and Animate can be automatically corrected using the incompatibility report and the import recommendations suggested in the Import options area of the AI Import dialog box.

Select individual objects

1 Select the object to specify import options for. Illustrator objects that you can select include layers, groups, individual paths, text, and images.

2 Review the import options available for the type of object you've selected in the object options section of the dialog box. Note whether any incompatibilities are listed and what the recommended correction is to import the object.

3 Select the desired import options, and select another object to specify import options for, or click OK.

(Flash Professional CS6 and earlier versions only) Selecting layers

The Layers panel lists the objects in a document. By default, every Illustrator document contains at least one layer, and each object in a given file is listed under that layer.

When an item in the Layers panel contains other items, a triangle appears to the left of the item's name. To show or hide the content, click the triangle. If no triangle appears, the layer contains no additional items.***note**: You can expand or collapse all groups and layers using the AI Importer context menu. Right-click to display the context menu and select Expand All or Collapse All.*

Selection column Controls whether items are selected for import or not. If an item is checked, you can select that layer and specify import options; if Edit is not checked, the layer is dimmed and you cannot specify any import setting for the item in that layer.

Object Type column An icon indicates what the Animate object type located on that layer will be when imported and, if visible, that the item is selected. The object types are:

- Text
- Path
- Group
- Movie clip
- Graphic symbol
- Image

Text import options

Animate lets you import text as editable text, vector outlines, or a flattened bitmap. To maintain supported blend modes, AI effects, and transparency of less than 100% between Illustrator and Animate, import text as a movie clip. Importing text as a movie clip preserves the editability of compatible visual effects.

Editable Text By default, Illustrator text imports as editable Animate text. The appearance of the text can be compromised to maintain the editability of the text.

Vector Outlines Converts text to vector paths. Use this option to preserve the visual appearance of the text. Some visual effects might be sacrificed—such as unsupported blend modes and filters—but visual attributes such as text on a path are maintained if the text is imported as a movie clip. The text itself is no longer editable, but opacity and compatible blend modes maintain their editability.

note: To preserve the drop shadow, inner glow, outer glow, and Gaussian blur that AI effects applied to text as editable Animate filters, select Create Movie Clip Import to import the text as a movie clip.

Bitmap Rasterizes the text into a bitmap to preserve the exact appearance of the text as it was in Illustrator. If filters or other effects are applied that are not compatible with Animate, importing the text as a bitmap preserves the visual appearance. Rasterized text is no longer editable.

Path import options

A path is the line that results from drawing in Illustrator. A path is either open, like an arc, or closed, like a circle. For an open path, the starting and ending anchor points for the path are called endpoints. Editable paths can be imported into Animate, however, if certain blend modes, filters, or other effects are applied to the path, those effects might not be compatible with Animate.

Bitmap Rasterizes the path into a bitmap to preserve the exact appearance of the path in Illustrator. A rasterized image is no longer editable.

Editable Path Creates an editable vector path. Supported blend modes, effects, and object transparency are preserved, but attributes not supported in Animate are discarded.

Image import options

Bitmap images are the most common electronic medium for continuous-tone images, such as photographs or digital paintings. Illustrator creates bitmap effects by using filters, effects, and graphic styles. While many of these effects are compatible with Animate, some might need to be flattened—or rasterized—to preserve their visual appearance.

note: If a raster file in Illustrator is linked, only JPEG, GIF, and PNG are imported with their native format preserved. All other file types are converted to the PNG format in Animate. Additionally, the conversion (to PNG) depends on the version of QuickTime® installed on your computer.

Flatten Bitmap To Maintain Appearance Rasterizes the image into a bitmap to preserve the appearance of blending modes and effects that are not supported in Animate. A rasterized image is no longer editable.

Create Movie Clip Imports Illustrator images as movie clips.

(Flash Professional CS6 and earlier versions only) Group import options

Groups are collections of graphic objects that are treated as a single unit. Grouping lets you move or transform a number of objects without affecting their attributes or relative positions. For example, you might group the objects in a logo design so that you can move and scale the logo as one unit. Groups can also be nested. That is, they can be grouped in other objects or groups to form larger groups.

Groups appear as <Group> items in the Import panel. When an item such as a group contains other items, a triangle appears to the left of the item's name. Click the triangle to show or hide the contents of the group. If no triangle appears, the item contains no additional items.

Import As Bitmap Rasterizes the group into a bitmap to preserve the appearance of the objects as they appeared in Illustrator. After a group is converted to a bitmap, the objects in it cannot be selected or renamed.

Create Movie Clip Encapsulates all objects in the group into a single movie clip.

Copy and pasting between Illustrator and Animate

If you copy and paste (or drag-and-drop) artwork between Illustrator and Animate, the Paste dialog box appears, which provides import settings for the AI file being copied (or pasted).

Paste As Bitmap Flattens the file being copied into a single bitmap object.

Paste Using AI File Importer Preferences Imports the file using the AI file import setting specified in Animate Preferences (Edit > Preferences).

Apply Recommended Import Settings To Resolve Incompatibilities Enabled by default when Paste Using AI File Importer Preferences is selected. Automatically fixes any incompatibilities detected in the AI file.

Maintain Layers Enabled by default when Paste Using AI File Importer Preferences is selected. Specifies that layers in the AI file be converted to Animate layers (the same as if you selected Convert To Flash Layers from the AI Import dialog box). If deselected, all layers are flattened into a single layer.

Working with InDesign files in Animate

You can import InDesign artwork using the XFL file format exported from InDesign CS4, or the FLA file format exported from InDesign CS5. For more information about the XFL file format, see Opening XFL files.

Working with symbols in Animate CC

About symbols

A symbol is a graphic, button, or movie clip that you create once in the Animate CC (formerly Flash Professional CC) authoring environment or by using the SimpleButton (AS 3.0) and MovieClip classes. You can then reuse the symbol throughout your document or in other documents.

A symbol can include artwork that you import from another application. Any symbol that you create automatically becomes part of the library for the current document.

An instance is a copy of a symbol located on the Stage or nested inside another symbol. An instance can be different from its parent symbol in color, size, and function. Editing the symbol updates all of its instances, but applying effects to an instance of a symbol updates only that instance.

Using symbols in your documents dramatically reduces file size; saving several instances of a symbol requires less storage space than saving multiple copies of the contents of the symbol. For example, you can reduce the file size of your documents by converting static graphics, such as background images, into symbols and then reusing them. Using symbols can also speed SWF file playback, because a symbol needs to be downloaded to Flash® Player only once.

Share symbols among documents as shared library assets during authoring or at runtime. For runtime shared assets, you can link assets in a source document to any number of destination documents, without importing the assets into the destination document. For assets shared during authoring, you can update or replace a symbol with any other symbol available on your local network.

If you import library assets with the same name as assets already in the library, you can resolve naming conflicts without accidentally overwriting existing assets.

Additional introductory instruction about symbols is available from these resources:

Types of symbols

Each symbol has a unique Timeline and Stage, complete with layers. You can add frames, keyframes, and layers to a symbol Timeline, just as you can to the main Timeline. When you create a symbol you choose the symbol type.

- Use graphic symbols for static images and to create reusable pieces of animation that are tied to the main Timeline. Graphic symbols operate in sync with the main Timeline. Interactive controls and sounds won't work in a graphic symbol's animation sequence. Graphic symbols add less to the FLA file size than buttons or movie clips because they have no timeline.
- Use button symbols to create interactive buttons that respond to mouse clicks, rollovers, or other actions. You define the graphics associated with various button states, and then assign actions to a button instance. For more information, see Handling events in the ActionScript 3.0 Developer's Guide.
- Use movie clip symbols to create reusable pieces of animation. Movie clips have their own multiframe Timeline that is independent from the main Timeline—think of them as nested inside a main Timeline that can contain interactive controls, sounds, and even other movie clip instances. You can also place movie clip instances inside the Timeline of a button symbol to create animated buttons. In addition, movie clips are scriptable with ActionScript®.
- Use font symbols to export a font and use it in other Animate documents.

  Animate provides built-in components, movie clips with defined parameters, that you can use to add user interface elements, such as buttons, checkboxes, or scroll bars, to your documents. For more information, see About ActionScript 3.0 Components in Using ActionScript 3.0 Components.

  note: To preview animation in component instances and scaling of 9-slice-scaled movie clips in the Animate authoring environment, select Control > Enable Live Preview.

Create symbols

You can create a symbol from selected objects on the Stage, create an empty symbol and make or import the content in symbol-editing mode, and create font symbols in Animate. Symbols can contain all the functionality that Animate can create, including animation.

Using symbols that contain animation lets you create Animate applications with a lot of movement while minimizing file size. Consider creating animation in a symbol that has a repetitive or cyclic action—the up-and-down motion of a bird's wings, for example.

To add symbols to your document, use shared library assets during authoring or at runtime.

Convert selected elements to a symbol

1. Select an element or several elements on the Stage. Do one of the following:
   - Select Modify > Convert To Symbol.
   - Drag the selection to the Library panel.
   - Right-click (Windows) or Control-click (Macintosh) and select Convert To Symbol from the context menu.
2. In the Convert To Symbol dialog box, type the name of the symbol and select the behavior.
3. Click in the registration grid to position the registration point for the symbol.
4. Click OK.

   Animate adds the symbol to the library. The selection on the Stage becomes an instance of the symbol. Once you have created a symbol, you can edit it in symbol edit mode by choosing Edit > Edit Symbols, or you can edit it in the context of the Stage by choosing Edit > Edit In Place. You can also change the registration point of a symbol.

Create an empty symbol

1 Do one of the following:

- Select Insert > New Symbol.
- Click the New Symbol button at the lower left of the Library panel.
- Select New Symbol from the Library Panel menu in the upper-right corner of the Library panel.

2 In the Create New Symbol dialog box, type the name of the symbol and select the behavior.

3 Click OK.

Animate adds the symbol to the library and switches to symbol-editing mode. In symbol-editing mode, the name of the symbol appears above the upper-left corner of the Stage, and a cross hair indicates the symbol's registration point.

4 To create the symbol content, use the Timeline, draw with the drawing tools, import media, or create instances of other symbols.

5 To return to document-editing mode, do one of the following:

- Click the Back button.
- Select Edit > Edit Document.
- Click the scene name in the Edit bar.

When you create a symbol, the registration point is placed at the center of the window in symbol-editing mode. You can place the symbol contents in the window in relation to the registration point. To change the registration point, when you edit a symbol, move the symbol contents in relation to the registration point.

6 In the ActionScript Linkage section, you can choose to export for ActionScript by selecting the Export for ActionScript checkbox. The Class and Base Class are automatically displayed (you can choose to rename the class names). Animate searches for class definitions in an external AS file or a linked SWC file. If the class definitions are not found in these locations, Animate automatically generates class files. For more information, see this article.

(Animate CC only) Swapping multiple symbols

The Swap Symbol option allows you to swap symbols with a selected symbol or bitmaps.

1 In your Animate document, select multiple symbols on the stage.

2 On the Properties panel, click SWAP.

3 On the Swap Symbol dialog, select the symbol you want to replace all selected symbols/bitmaps with.

4 Click OK.

Convert animation on the Stage into a movie clip symbol

To reuse an animated sequence on the Stage, or to manipulate it as an instance, select it and save it as a movie clip symbol.

1 On the main Timeline, select every frame in every layer of the animation on the Stage that you want to use. For information on selecting frames, see Inserting frames in the timeline.

2 Do one of the following to copy the frames:

- Right-click (Windows) or Control-click (Macintosh) any selected frame, and select Copy Frames from the context menu. To delete the sequence after converting it to a movie clip, select Cut.

- Select Edit > Timeline > Copy Frames. To delete the sequence after converting it to a movie clip, select Cut Frames.

3 Deselect your selection and make sure nothing on the Stage is selected. Select Insert > New Symbol.

4 Name the symbol. For Type, select Movie Clip, then click OK.

5 On the Timeline, click Frame 1 on Layer 1, and select Edit > Timeline > Paste Frames.

This action pastes the frames (and any layers and layer names) you copied from the main Timeline to the Timeline of this movie clip symbol. Any animation, buttons, or interactivity from the frames you copied now becomes an independent animation (a movie clip symbol) that you can reuse.

6 To return to document-editing mode, do one of the following:

- Click the Back button.
- Select Edit > Edit Document.
- Click the scene name in the Edit bar above the Stage.

Duplicate symbols

Duplicating a symbol lets you use an existing symbol as a starting point for creating a symbol.

To create versions of the symbol with different appearances, also use instances.

Duplicate a symbol using the Library panel

? Select a symbol in the Library panel and do one of the following:

- Right-click (Windows) or Control-click (Macintosh), and select Duplicate from the context menu.
- Select Duplicate from the Library Panel menu.

Duplicate a symbol by selecting an instance

1 Select an instance of the symbol on the Stage.

2 Select Modify > Symbol > Duplicate Symbol.

The symbol is duplicated, and the instance is replaced with an instance of the duplicate symbol.

Edit symbols

When you edit a symbol, Animate updates all the instances of that symbol in your document. Edit the symbol in the following ways:

- In context with the other objects on the Stage by using the Edit In Place command. Other objects are dimmed to distinguish them from the symbol you are editing. The name of the symbol you are editing appears in an Edit bar at the top of the Stage, to the right of the current scene name.
- In a separate window, using the Edit In New Window command. Editing a symbol in a separate window lets you see the symbol and the main Timeline at the same time. The name of the symbol you are editing appears in the Edit bar at the top of the Stage.

  You edit the symbol by changing the window from the Stage view to a view of only the symbol, using symbol-editing mode. The name of the symbol you are editing appears in the Edit bar at the top of the Stage, to the right of the current scene name.

  When you edit a symbol, Animate updates all instances of the symbol throughout the document to reflect your edits. While editing a symbol, use any of the drawing tools, import media, or create instances of other symbols.

- Change the registration point of a symbol (the point identified by the coordinates 0, 0) by using any symbol-editing method.

Edit a symbol in place

1. Do one of the following:
   - Double-click an instance of the symbol on the Stage.
   - Select an instance of the symbol on the Stage and right-click (Windows) or Control-click (Macintosh), and select Edit in Place.
   - Select an instance of the symbol on the Stage, and select Edit > Edit In Place.
2. Edit the symbol.
3. To exit edit-in-place mode and return to document-editing mode, do one of the following:
   - Click the Back button.
   - Select the current scene name from the Scene menu in the Edit bar.
   - Select Edit > Edit Document.
   - Double-click outside the symbol content.

Edit a symbol in a new window

1. Select an instance of the symbol on the Stage and right-click (Windows) or Control-click (Macintosh), and select Edit In New Window.
2. Edit the symbol.
3. Click the Close box in the upper-right corner (Windows) or upper-left corner (Macintosh) to close the new window, and click in the main document window to return to editing the main document.

Edit a symbol in symbol-editing mode

1. Do one of the following to select the symbol:
   - Double-click the symbol's icon in the Library panel.
   - Select an instance of the symbol on the Stage, and right-click (Windows) or Control-click (Macintosh), and select Edit from the context menu.
   - Select an instance of the symbol on the Stage and select Edit > Edit Symbols.
   - Select the symbol in the Library panel and select Edit from the Library Panel menu, or right-click (Windows) or Control-click (Macintosh) the symbol in the Library panel and select Edit.
2. Edit the symbol.
3. To exit symbol-editing mode and return to editing the document, do one of the following:
   - Click the Back button at the left of the Edit bar at the top of the Stage.
   - Select Edit > Edit Document.
   - Click the scene name in the Edit bar at the top of the Stage.
   - Double-click outside the symbol content.

Working with Animate and Flash Builder

Adobe Animate CC (formerly Flash Professional CC) and Flex® can be used together in a variety of ways, including creating custom graphics and components in Animate for use in Flex®. The following tutorials demonstrate several of the ways Animate® and Flex® can be used together.

Note: The Design View workflow between Animate and Flash Builder is deprecated. On initiating this workflow from Flash Builder 4.6, an exception is thrown in Animate.

Some of the workflows of Flash Builder may not be interoperable with the latest versions of Animate CC (2017 onwards).

Editing and debugging ActionScript with Animate and Flash Builder

Before you begin

In order to enable these Animate/Flash Builder workflows, ensure that the following conditions are true:

- Both Flash CS5 and Flash Builder 4 are installed.
- To launch a FLA file from Flash Builder, your project must be assigned the Animate project nature in the Package Explorer panel.

  For more information about assigning project natures in Flash Builder, see Flash Builder Help.
- To launch a FLA file Flash Builder, your project must have a FLA file assigned to be used for testing and debugging in the Animate CC properties of the project.

Testing, debugging, and publishingin Animate from Flash Builder

To perform testing or debugging in Animate with a file you are editing in Flash Builder 4:

- From the Flash Builder development perspective, choose Run > Test Movie or Run > Debug Movie. Note that each menu item has a Animate icon next to it. Once the SWF window or debug session is closed, focus will return to Flash Builder unless there are compiler errors in frame scripts inside the FLA file associated with the project. Information about all errors is sent to the Errors panel in Flash Builder.

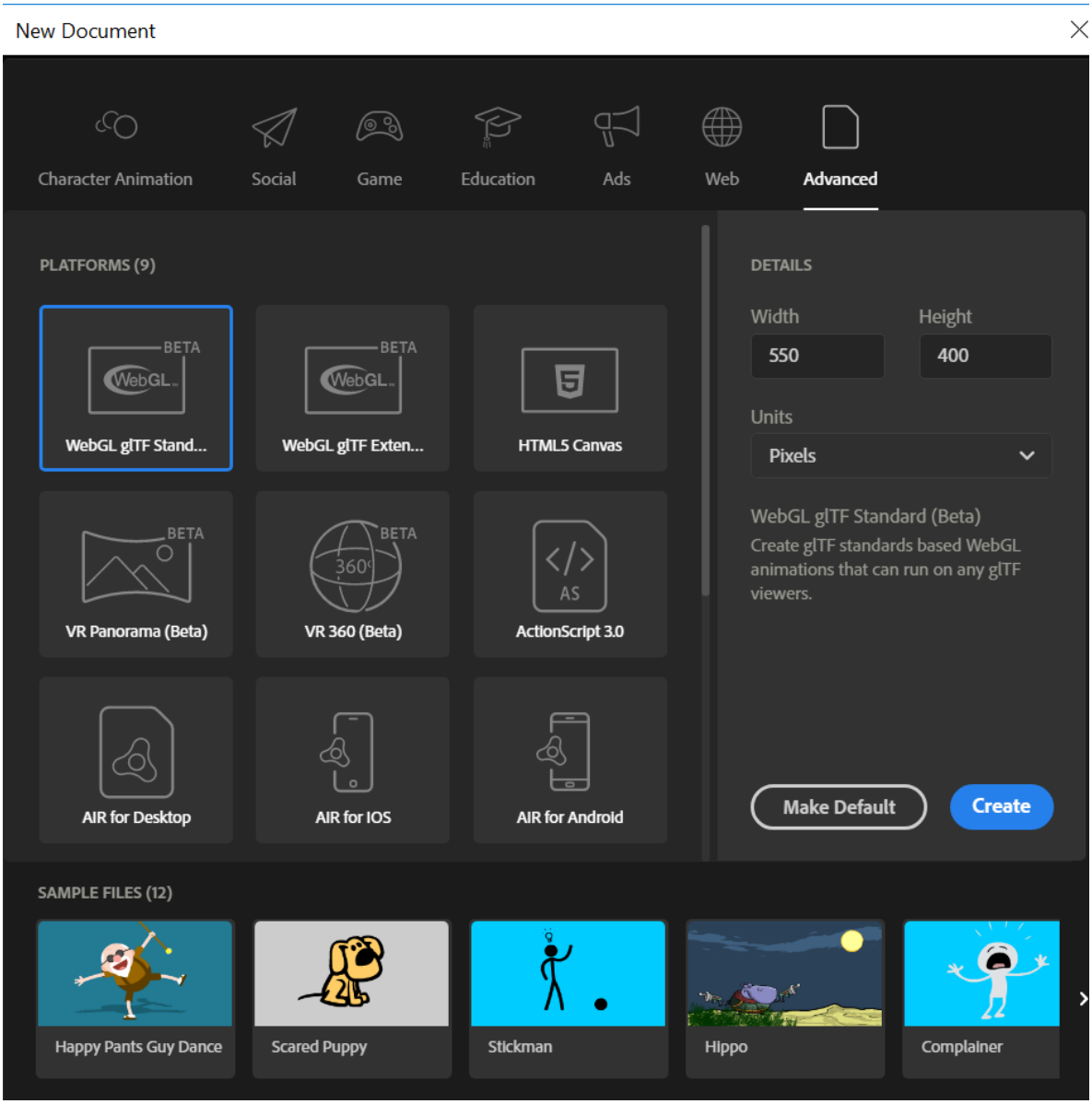
To publish the FLA file associated with the current project in Flash Builder:

- From the Flash Builder development perspective, choose Project > Publish Movie. Note the Animate icon next to the menu command.

Editing AS files in Flash Builder from Animate

To create a new ActionScript 3.0 class or interface and assign Flash Builder as the editor:

1 Choose File > New.



New Document

2 In the New Document dialog box, choose ActionScript 3.0 class or ActionScript 3.0 interface.

3 In the Create ActionScxript 3.0 dialog box, select Flash Builder as the application to create the file and click OK. Flash Builder opens.

4 In Flash Builder, choose a FLA file or XFL file to be associated with the ActionScript file and click Finish.

To open and edit an AS file in Flash Builder from Animate:

1 In the Library panel, right-click a symbol associated with the class or interface and choose Properties.

2 In the Symbol Properties dialog box, click Edit Class Definition.

3 In the Edit ActionScript 3.0 dialog box that appears, verify that the editor assigned to the AS file is Flash Builder and click OK.

If Flash Builder is not assigned to edit the file, select Flash Builder as the application to edit the class file and click OK.

Flash Builder opens to edit the file.

Creating components for Flex

In Adobe Animate, you can create content for use as components in Adobe® Flex® applications. This content can include both visual elements and Adobe® ActionScript® 3.0 code.

Creating components in Animate for use in Flex allows you to take advantage of the flexible graphic design capabilities of Animate while still utilizing the capabilities of Flex.

In order to create Flex components in Animate, you must install the Flex Component Kit for Animate. You install the component kit using Adobe Extension Manager. Some versions of the component kit may not support all features of Adobe Animate, so be sure to download the latest version of the component kit from www.adobe.com/go/flex_ck_en.

For more information about using Flex and Animate together, refer to the Flex documentation on the Adobe web site at www.adobe.com/go/learn_flexresources_en.

To create a Flex component in Animate:

1. Be sure you have Adobe Extension Manager installed. To download Extension Manager, visit the Extension Manager download page at www.adobe.com/go/extension_manager_dl_en.

   By default, Extension Manager is installed with the Adobe Creative Suite applications.

2. Download and install the Flex Component Kit, available at www.adobe.com/go/flex_ck_en. Be sure to quit Animate before installing the component kit. For information about installing extensions with Adobe Extension Manager, see www.adobe.com/go/learn_extension_manager_en.

3. Launch Animate. Two new commands appear in the Commands menu, Convert Symbol to Flex Component and Convert Symbol to Flex Container.

4. In Animate, create a movie clip symbol containing the artwork and ActionScript 3.0 code you want to include in the Flex component. The content must be contained in a movie clip symbol before conversion to a Flex component.

5. Before converting the movie clip to a Flex component, be sure that it meets the following requirements for compatibility with Flex:

   - The frame rate of the FLA file should be 24 fps and should match the frame rate of any Flex projects that will make use of the component.
   - The registration point should be located at the 0, 0 point in the movie clip.

     ***note**: To ensure that all content in the movie clip has a registration point of 0, 0, click the Edit Multiple Frames button at the bottom of the Timeline, select all frames in the movie clip timeline, select all of your content in all the frames, and move it to 0, 0 in the Property inspector.*

6. Select the movie clip in the Library panel and choose Commands > Convert Symbol to Flex Component.

   Animate converts the movie clip to a Flex component, changes its icon to a Flex icon in the Library, and imports the FlexComponentBase class compiled clip to the Library. Animate embeds the FlexComponentBase into the Flex component SCW file created in the next step.

   Note the progress messages displayed in the Output panel while Animate converts the movie clip.

7. Choose File > Publish to create a SWC file containing the compiled Flex component. Animate also creates a SWF file from the main FLA file, but you can ignore the SWF file if you choose. The published component SWC file is now ready for use in Flex.

8 To use the SWC file in Flex, do one of the following:

- Copy the SWC file from Animate and paste it into the bin folder of your Flex project.
- Add the SWC file to library path of your Flex project. For more information, see the Flex Builder documentation at www.adobe.com/go/learn_flexresources_en.

Using Flex metadata

If you are writing ActionScript 3.0 code to be used in Flex, you can place metadata in the code to embed external files in any published SWF that includes the ActionScript code. Usually, these *[Embed]* metadata declarations are used to embed image files, fonts, individual symbols, or other SWF files into the SWF.

Remember that metadata is "data about data." You add metadata to ActionScript on the line immediately preceding the line of code that the metadata applies to. The compiler then takes the metadata into account when compiling the line of code that follows it.

For example, to embed an image called button_up.png that is stored in the directory one level above the ActionScript file, you would use the following ActionScript:

[Embed("../button_up.png")]

private var buttonUpImage:Class;

The *[Embed]* metadata tag tells the compiler to embed the file named button_up.png in the SWF file and that the file should be associated with the variable named *buttonUpImage*.

For more information about embedding assets with metadata in Flex, see Embedding Assets in the Flex 3 Developer Guide at www.adobe.com/go/learn_flexresources_en.

If you use a feature that requires the Flex SDK, such as *[Embed]* metadata, at compile time Animate prompts you to add the Flex.SWC file to the Library path of your FLA file. The Flex.SWC file contains compiled classes needed to support Flex metadata. Click Update Library Path in the dialog box to add Flex.SWC to the Library path. You can also add the Flex.SWC file to the Library path in the ActionScript publish settings later.

Additional resources

The following resources provide additional information and examples about integrating Animate with Flash Builder:

- Site: http://jessewarden.com/

Working with Adobe Premiere Pro and After Effects

Working with Adobe Premiere Pro and Adobe Animate

Adobe Premiere Pro is a professional tool for editing video. If you use Adobe Animate to design interactive content for websites or mobile devices, you can use Adobe Premiere Pro to edit the movies for those projects. Adobe Premiere Pro gives you professional tools for frame-accurate video editing, including tools for optimizing video files for playback on computer screens and mobile devices.

Adobe **Animate** is a tool for incorporating video footage into presentations for the web and mobile devices. Adobe Animate offers technological and creative benefits that let you fuse video with data, graphics, sound, and interactive control. The FLV and F4V formats let you put video on a web page in a format that almost anyone can view.

You can export FLV and F4V files from Adobe Premiere Pro. You can embed those files into interactive websites or applications for mobile devices with Adobe Animate. Adobe Animate can import sequence markers you add in an Adobe Premiere Pro sequence as cue points. You can use these cue points to trigger events in SWF files on playback.

If you export video files in other standard formats, Adobe Animate can encode your videos within rich media applications. Adobe Animate uses the latest compression technologies to deliver the greatest quality possible at small file sizes.

Moving assets between Adobe Premiere Pro and Adobe Animate

In Adobe Premiere Pro, you can add Flash cue point markers to a timeline. Flash cue point markers serve as cue points in a rich media application. There are two types of cue point markers: event and navigational cue point markers. You can use navigational cue point markers to navigate to different sections of FLV and F4V files, and to trigger the display of onscreen texts. You can use event cue point markers for triggering action scripts at specified times in FLV and F4V files.

You can export a movie from Adobe Premiere Pro directly into the FLV and F4V formats. You can choose from several**Export Settings** presets. These presets balance file sizes against audio and video quality to achieve the bit rate needed for any target audience or device. If you export the movie with an alpha channel, you can use the movie easily used as a layer in a rich media project.

You can import the FLV or F4V file into Adobe Animate. Animate reads sequence markers as navigational or event cue points. In Animate, you can also customize the interface that surrounds your video.

Alternatively, you can use Animate to create animations for use in movies. You can create an animation in Animate. You can export the animation as an FLV or F4V file. Then, you can import the FLV or F4V file into Adobe Premiere Pro for editing. In Adobe Premiere Pro, for example, you could add titles or mix the animation with other video sources.

Working with Animate and After Effects

If you use Adobe® Animate® to create video or animation, you can use **After Effects** to edit and refine the video. For example, from Animate you can export animations and applications as QuickTime movies or Flash Video (FLV) files. You can then use **After Effects** to edit and refine the video.

If you use After Effects to edit and composite video, you can then use Animate to publish that video. You can also export an **After Effects** composition as XFL content for further editing in Animate.

Animate and **After Effects** use separate terms for some concepts that they share, including the following:

- A composition in **After Effects** is like a movie clip in Animate.
- The composition frame in the Composition panel is like the Stage in Animate.
- The Project panel in After Effects is like the Library panel in Animate.
- Project files in After Effects are like FLA files in Animate.
- You render and export a movie from **After Effects**; you publish a SWF file from Animate CC.

Exporting QuickTime video from Flash

If you create animations or applications with Animate, you can export them as QuickTime movies using the File > Export > Export Movie command in Animate. For an Animate animation, you can optimize the video output for animation. For an Animate application, Animate renders video of the application as it runs, allowing the user to manipulate it. This lets you capture the branches or states of your application that you want to include in the video file.

Rendering and exporting FLV and F4V files from After Effects

When you render finished video from After Effects, select FLV or F4V as the output format to render and export video that can play in Flash Player. You can then import the FLV or F4V file into Animate and publish it in a SWF file, which can be played by Flash Player.

Importing and publishing video in Flash

When you import an FLV or F4V file into Animate, you can use various techniques, such as scripting or Animate components, to control the visual interface that surrounds your video. For example, you may include playback controls or other graphics. You can also add graphic layers on top of the FLV or F4V file for composite results.

Composite graphics, animation, and video

Animate and After Effects each include many capabilities that allow you to perform complex compositing of video and graphics. Which application you choose to use will depend on your personal preferences and the type of final output you want to create.

Animate is the more web-oriented of the two applications, with its small final file size. Animate also allows for runtime control of animation. After Effects is oriented toward video and film production, provides a wide range of visual effects, and is used to create video files as final output.

Both applications can be used to create original graphics and animation. Both use a timeline and offer scripting capabilities for controlling animation programmatically. After Effects includes a larger set of effects, while the Animate ActionScript® language is the more robust of the two scripting environments.

Both applications allow you to place graphics on separate layers for compositing. These layers can be turned on and off as needed. Both also allow you to apply effects to the contents of individual layers.

In Animate, composites do not affect the video content directly; they affect only the appearance of the video during playback in Flash Player. In contrast, when you composite with imported video in After Effects, the video file you export actually incorporates the composited graphics and effects.

Because all drawing and painting in After Effects is done on layers separate from any imported video, it is always non-destructive. Animate has both destructive and nondestructive drawing modes.

Exporting After Effects content for use in Flash

You can export After Effects content for use in Animate. You can export a SWF file that can be played immediately in Flash Player or used as part of another rich media project. When you export content from After Effects in SWF format, some of the content may be flattened and rasterized in the SWF file.

To edit your After Effects content further in Animate, export a composition as an XFL file. An XFL file is a type of Animate file that stores the same information as a FLA file, but in XML format. When you export a composition from After Effects as XFL for use in Animate, some of the layers and keyframes that you created in After Effects are preserved in the Animate version. When you import the XFL file in Animate, it unpacks the XFL file and adds the assets from the file to your FLA file according to the instructions in the XFL file.

Importing Flash SWF files into After Effects

Animate has a unique set of vector art tools that make it useful for a variety of drawing tasks not possible in After Effects or Adobe® Illustrator®. You can import SWF files into After Effects to composite them with other video or render them as video with additional creative effects. Interactive content and scripted animation are not retained. Animation defined by keyframes is retained.

Each SWF file imported into After Effects is flattened into a single continuously rasterized layer, with its alpha channel preserved. Continuous rasterization means that graphics stay sharp as they are scaled up. This import method allows you to use the root layer or object of your SWF files as a smoothly rendered element in After Effects, allowing the best capabilities of each tool to work together.

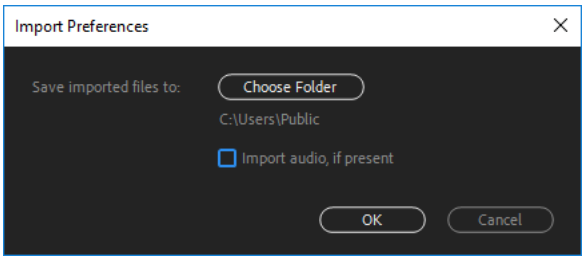
Importing Animate FLA files into After Effects

Now, you can import Animate FLA files into After Effects to composite them with a video or render them as video with additional creative effects. After Effects can interact with Animate using the plug-in.

1. Install Animate CC 19.0 and After Effects 16.0 from the Creative Cloud application.
2. Launch After Effects CC and create a project.
3. Go to menu **File > Import > File...**
4. Choose **sample.fla** file and click **Import.**

   Note: Use any AS3 .fla as sample.fla file.
5. In the **Import Preferences** dialog, browse to a location where all layer SWFs are generated and click **OK**.

   By default, it takes the saved FLA file location.



Import preferences dialog

If you choose **Import Audio** option, the audio on main timeline layers in FLA is exported as .mp3 or .wav sound files. This audio is imported in After Effects as a separate layer.

All the layers are imported inside a composition in After Effects. Layer order in composition is similar to the order that is used in Animate CC.

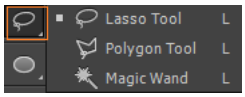
Note:

Advanced layer features such as Layer depth, Camera effects are not supported.

Selecting objects in Animate CC

In Animate CC, you can use Pointer, Subselection, and Lasso tools to select objects. When you select objects or strokes, Animate highlights them with a marquee. You can choose to select only an object's strokes or only its fills. You can Hide selection highlightingto edit objects without viewing highlighting.

Pointer, Subselection, and Lasso tools.



Modifiers of Lasso tool

Tool	Icon	Description
Selection Tool (V)		Use this tool to select an entire object. Click or drag an object to enclose object with rectangular selection.
Subselection Tool (A)		Use this tool to reshape a motion path of an animation. You can expose the control points and Bezier handles on the path that correspond to each position property keyframe.
Lasso Tool (L)		Use this tool to create an irregular selection outline on an object.
Polygon Tool (L)		Use this tool to define a selection area with a series of connected straight lines. To pick up this tool, keep the Lasso tool selected and click the Polygon Tool.
Magic Wand Tool (L)		Use this tool to select areas of a bitmap graphic that contain the same or similar colors. To pick up this tool, keep the Lasso tool selected and click the Magic Wand.

Modifying objects

Select the object first, to modify it. You can group individual objects to manipulate them as a single object. Modifying lines and shapes can alter other lines and shapes on the same layer. To prevent a group or symbol from being selected and accidentally changed, lock the group or symbol.

Modifying properties of an object

You can use Property inspector to modify an object's stroke and fill properties. When you select an object, the Property inspector displays the following:

- The object's stroke and fill, its pixel dimensions, and the x and y coordinates of the object's transformation point.
- A mixed selection, if you select multiple items. The pixel dimensions and x and y coordinates of the selected set of items.

Select objects with the Selection tool

The Selection tool lets you select entire objects by clicking an object or dragging to enclose the object within a rectangular selection marquee. To select instances, groups, and type blocks, you have to enclose them.

Note:

*To select the Selection tool, you can also press the **V** key. To temporarily switch to the Selection tool when another tool is active, hold down the Control key (Windows) or Command key (Macintosh). See keyboard shortcuts for more information.*

To disable the Shift-selecting option, deselect the option in Animate General Preferences. See Set preferences in Animate.

Selecting objects

- To select a stroke, fill, group, instance, or text block, click the object.
- To select connected lines, double-click one of the lines.
- To select a filled shape and its stroked outline, double-click the fill.
- To select objects within a rectangular area, drag a marquee around the object or objects to select.

Making more selections

- To add to a selection, hold down the Shift key while making more selections.
- To select everything on every layer of a scene, select Edit > Select All, or press Control+A (Windows) or Command+A (Macintosh). Select All doesn't select objects on locked or hidden layers, or layers not on the current Timeline.
- To select everything on one layer between keyframes, click a frame in the Timeline.

Deselect all

To deselect everything on every layer, select Edit > Deselect All, or press Control+Shift+A (Windows) or Command+Shift+A (Macintosh). See keyboard shortcuts for more information.

Deselect individual items

To deselect any individual item from a group of selected objects:

1. Select the selection tool
2. Hold down the Shift key and
3. Click the individual item

The individual items can be any strokes, fills, or drawing-objects.

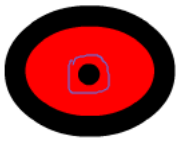
Lock/Unlock

To lock or unlock a group or symbol, select the group or symbol, and then select Modify > Arrange > Lock. Select Modify > Arrange > Unlock All to unlock all locked groups and symbols.

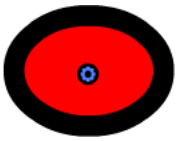
Draw a freehand selection area using Lasso tool

You can use the Lasso tool to create an irregular selection outline. Select it from the Tools or press L. Based on your setting preferences, to select an object you can choose to enclose the drawing-object or partially cover it. See **Set preferences for selecting** section in this page for more information.

1. Drag the Lasso tool around the area of an object. To select the inner circle of an object, drag the freehand lasso tool around it.



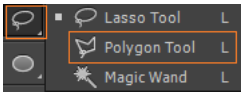
2 End the loop approximately where you started, or let Animate automatically close the loop. Animate closes the selection outline and highlights the selected object.



Draw a straight-edged selection area using Lasso's Polygon tool

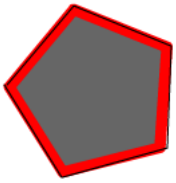
The Lasso tool's Polygon mode modifier lets you define a selection area with a series of connected straight lines. Keep the Lasso tool selected and click the Polygon Tool.

1 Select the Lasso tool's Polygon Mode modifier in the options area of the Tools panel.

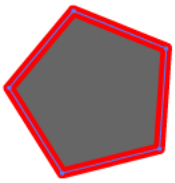


2 To set the starting point, click the object.

3 Position the pointer where you want the first line to end, and click at that position. Continue setting end points for more line segments.



4 To close the selection area, double-click at the last position. Animate closes the selection outline and highlights the selected object.



Draw a selection area with both freehand and straight-line edges

When you use the Lasso tool and its Polygon Mode modifier, you can switch between the freehand and straight-edged selection modes.

1. Deselect the Polygon Mode modifier of the Lasso tool.
2. To draw a freehand segment, drag the Lasso tool on the Stage.
3. To set start and end points for each new line segment, hold down the Alt key (Windows) or Option key (Macintosh) and click the area.

   Use this step to draw straight-edged segments.
4. To close the selection area, do one of the following:
   - Release the mouse button. Animate closes the selection area.
   - Double-click the starting end of the selection area line.

Hide selection highlighting

To view how an artwork appears in its final state, you can hide highlighting of an object while selecting and editing it.

? Select View > Hide Edges.

Select the Hide Edges option again to show selection highlighting.

Set custom bounding box colors for selected objects

You can customize the colors for bounding box rectangles that appear around selected objects on the Stage.

1. Select Edit > Preferences (Windows) or Animate > Preferences (Macintosh).
2. Click the General category.
3. In the Highlight Color section, select a color for each type of object, and click OK.

Set preferences for selecting

The Pointer, Subselection, and Lasso tools select objects by clicking them. The Pointer and Subselection tools select objects by dragging a rectangular selection marquee around the object. The Lasso tool selects objects by dragging a free-form selection marquee around the object. When an object is selected, a rectangular box appears around the object.

1. Select Edit > Preferences (Windows) or Animate > Preferences (Macintosh).
2. In the General category of the Preferences dialog box, do one of the following:
   - To select only enclosed objects and points, deselect Contact-Sensitive Selection and Lasso tools. Points that lie within the selection area are selected.
   - To select partially enclosed objects or groups, select Contact-Sensitive Selection and Lasso tools.

Work with classic text in Animate CC

About classic text

Classic text is the name for the older text engine in Animate. The classic text engine is still available in CS5 and later. Classic text may be preferable for certain types of content, such as for mobile devices, where SWF file size must be kept to a minimum. However, in some cases, such as those requiring fine control over text layout, you will want to use the new TLF text. For information about TLF text, see Working with Text Layout Framework (TLF) text.

You specify whether an individual text object on the Stage uses the Classic or TLF text engine by selecting the text object and then choosing the desired text engine in the Text Property inspector.

Note:

You can change the text engine used by a text object at any time. For infomration about converting Classic text to TLF text, see Converting between Classic and TLF text.

You can include classic text in your Animate applications in a variety of ways. You can create text fields containing static text, which you create when you author the document. You can also create dynamic text fields, which display updating text, such as stock quotes or news headlines, and input text fields, which allow users to enter text for forms or surveys.

Animate provides many ways to work with text. For example, you can orient text horizontally or vertically; set attributes such as font, size, style, color, and line spacing; check spelling; transform text by rotating, skewing, or flipping; link text; make text selectable; animate text; control font substitution; and use a font as part of a shared library.
Animate documents can use Type 1 PostScript® fonts, TrueType®, and bitmap fonts (Macintosh only).

You can preserve rich text formatting in text fields, using HTML tags and attributes. When you use HTML text for the content of a dynamic or input text field, the text can flow around an image, such as a SWF or JPEG file or a movie clip. See Using HTML-formatted text in Learning ActionScript 2.0.

Like movie clip instances, text field instances are ActionScript® objects that have properties and methods. By giving a text field an instance name, you can manipulate it with ActionScript. However, you cannot write ActionScript code inside a text instance, because text instances don't have Timelines.

You can use ActionScript to format input and dynamic text, and to create scrolling text fields. ActionScript has events for dynamic and input text fields that you can capture and use to trigger scripts. For information on using ActionScript to control text, see Working with Text and Strings in Learning ActionScript 2.0.

About classic text fields

You can create three types of classic text fields: static, dynamic, and input.

- Static text fields display text that doesn't change characters dynamically.
- Dynamic text fields display dynamically updating text, such as stock quotes or weather reports.
- Input text fields allow users to enter text in forms or surveys.

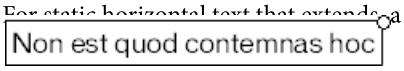
  You can create horizontal text (with a left-to-right flow) or static vertical text (with either a right-to-left or left-to-right flow). Note that the use of horizontal bidirectional languages (Hebrew, Arabic etc.) in classic text fields is not supported.

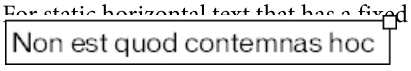
  When creating static text, you can place text on a single line that expands as you type, or in a fixed-width field (for horizontal text) or fixed-height field (for vertical text) that expands and wraps words automatically. When creating dynamic or input text, you can place text on a single line, or create a text field with a fixed width and height.

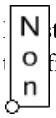
  note: When working with Static Vertical Text, the width field is disabled in the Properties Inspector. Modifying the height automatically adjusts the width value. Similarly, when working with Static Horizontal Text, the height field is disabled in the Properties Inspector. Modifying the width automatically adjusts the height value.

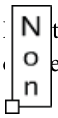
All classic text fields support Unicode.

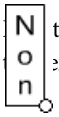
Animate displays a handle on the corner of each text field to identify the type of text field:

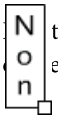
- For static horizontal text that extends, a round handle appears at the upper-right corner of the text field.


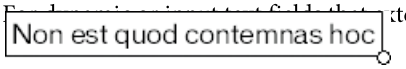
- For static horizontal text that has a fixed width, a square handle appears at the upper-right corner of the text field.


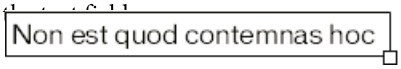
- tatic vertical text that has right-to-left flow and extends, a round handle appears at the lower-left corner of the field.


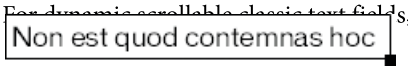
- tatic vertical text that has right-to-left flow and a fixed height, a square handle appears at the lower-left corner e text field.


- tatic vertical text that has left-to-right flow and extends, a round handle appears at the lower-right corner of ext field.


- tatic vertical text that has left-to-right flow and a fixed height, a square handle appears at the lower-right corner e text field.


- tend, a round handle appears at the lower-right corner of the text field.


- For dynamic or input text that has a defined height and width, a square handle appears at the lower-right corner of


- s, the round or square handle becomes solid black instead of hollow.


Shift-double-click the handle of dynamic and input text fields to create text fields that don't expand when you enter text on the Stage. This allows you to create a text field of a fixed size and fill it with more text than it can display to create scrolling text.

After you use the Text tool to create a text field, use the Property inspector to specify the type of text field, and to set values that control how the text field and its contents appear in the SWF file.

Create and edit text fields

Text is horizontal by default. However, static text can also be aligned vertically.

You can use most common word-processing techniques to edit text in Animate. Use the Cut, Copy, and Paste commands to move text in a Animate file as well as between Animate and other applications.

Add text to the Stage

1 Select the Text tool T.

2 Select Classic Text from the Text Engine menu at the top of the Text Property inspector.

3 In the Property inspector (Window > Properties), select a text type from the pop-up menu to specify the type of text field:

Dynamic Text Creates a field that displays dynamically updating text.

Input Text Creates a field in which users can enter text.

Static Text Creates a field that cannot update dynamically.

4 For static text only: In the Text Property inspector, select a direction for text orientation and flow from the Orientation Of Text menu. (Horizontal is the default setting.)

5 On the Stage, do one of the following:

- To create a text field that displays text in a single line, click where you want the text to start.
- To create a text field with a fixed width (for horizontal text) or fixed height (for vertical text), position the pointer where you want the text to start and drag to the desired width or height.

Note:

If you create a text field that extends past the edge of the Stage as you type, the text isn't lost. To make the handle accessible again, add line breaks, move the text field, or select View > Pasteboard.

6 Select text attributes in the Property inspector.

Change the size of a text field

? Drag the text field's resize handle.

When text is selected, a blue bounding box lets you resize the text field by dragging one of its handles. Static text fields have four handles that let you resize the text field horizontally. Dynamic text fields have eight handles that let you resize the text field vertically, horizontally, or diagonally.

Switch a text field between fixed-width (or fixed-height) and extending

? Double-click a resize handle.

Select characters in a text field

1 Select the Text tool T.

2 Do one of the following:

- Drag to select characters.
- Double-click to select a word.
- Click to specify the beginning of the selection, and Shift-click to specify the end of the selection.
- Press Control+A (Windows) or Command+A (Macintosh) to select all the text in the field.

Select text fields

? Using the Selection tool, click a text field. Shift-click to select multiple text fields.

Set dynamic and input text options

1 Click in an existing dynamic text field.

2 In the Property inspector, make sure Dynamic or Input is displayed in the pop-up menu.

3 Enter an instance name for the text field.

4 Specify the height, width, and location of text.

5 Select the font and style.

6 In the Paragraph section of the Property inspector, specify one of the following options from the Behavior menu:

Single line Displays the text as one line.

Multiline Displays the text in multiple lines.

Multiline No Wrap Displays text in multiple lines that break only if the last character is a breaking character, such as Enter (Windows) or Return (Macintosh).

7 To enable users to select dynamic text, click Selectable . Deselect this option to prevent users from selecting dynamic text.

8 To preserve rich text formatting (such as fonts and hyperlinks) with the appropriate HTML tags, click Render Text As HTML .

9 To display a black border and white background for the text field, click Show Border Around Text .

10 (Optional) In the Var box, enter the variable name for the text field. (Use this option only when authoring for Macromedia Flash Player 5 from Adobe or earlier.)

Beginning with Macromedia Flash MX (version 6), you assign the text field an instance name using the Property inspector. Although you can use the variable name method with dynamic text fields for backwards compatibility to Macromedia Flash 5 and earlier versions, Adobe doesn't recommend this, because you can't control other text field properties, or apply style sheet settings.

11 (Optional) Click Embed to open the Font Embedding dialog box. for more information, see Embed fonts for consistent text appearance.

Set preferences for vertical text

1 Select Edit > Preferences (Windows) or Animate > Preferences (Macintosh) and click the Text category in the Preferences dialog box.

2 Under Vertical Text, set any of these options:

Default Text Orientation Automatically gives new text fields vertical orientation.

Right to Left Text Flow Makes lines of vertical text fill the page from right to left.

No Kerning Prevents kerning from being applied to vertical text. (Kerning remains enabled for horizontal text.)

Setting classic text attributes

About classic text attributes

Note:

To use Cascading Style Sheets (CSS), use ActionScript to apply a stylesheet. For more information, see Applying cascading style sheets in the ActionScript 3.0 Developer's Guide.

You can set the font and paragraph attributes of text. Font attributes include font family, point size, style, color, letter spacing, autokerning, and character position. Paragraph attributes include alignment, margins, indents, and line spacing.

For static text, font outlines are exported in a published SWF file. For horizontal static text, you can use device fonts instead of exporting font outlines.

For dynamic or input text, Animate stores the names of the fonts, and Flash Player locates identical or similar fonts on the user's system. You can also embed font outlines in dynamic or input text fields. Embedding font outlines can increase file size, but it ensures that users have the correct font information.

When creating new text, Animate uses the text attributes that are currently set in the Property inspector. When you select existing text, use the Property inspector to change font or paragraph attributes, and to direct Animate to use device fonts rather than embedding font outline information.

Set a font, point size, style, and color

1 Using the Selection tool , select one or more text fields on the Stage.

2 In the Property inspector (Window > Properties), select a font from the Family pop-up menu, or enter a font name.

Note:

The _sans, _serif, _typewriter, and device fonts can be used only with static horizontal text.

3 Enter a value for the font size.

Font size is set in points, regardless of the current ruler units.

4 To apply bold or italic style, select the style from the Style menu.

If the selected font does not include a bold or italic style, the style does not appear in the menu. You can select the Faux Bold or Faux Italic styles from the Text menu (Text > Style > Faux Bold or Faux Italic). Faux Bold and Faux Italic styles are added to the Regular style by the operating system. The faux styles may not look as good as fonts that include a true bold or italic style.

5 Select a font rendering method from the Anti-Aliasing pop-up menu (directly below the Color control) to optimize text.

6 To select a fill color for text, click the Color control and do one of the following:

- Select a color from the Color menu.
- Type a color's hexadecimal value in the box in the upper-left corner.
- Click Color Picker and select a color from the system color picker. (When setting the text color, use only solid colors, not gradients. To apply a gradient to text, break the text apart and convert the text to its component lines and fills.)

Set letter spacing, kerning, and character position

Letter spacing inserts a uniform amount of space between characters. Use letter spacing to adjust the spacing of selected characters or entire blocks of text.

Kerning controls the spacing between pairs of characters. Many fonts have built-in kerning information. For example, A and V are often closer together than A and D. Animate provides horizontal tracking and kerning (for horizontal text) and vertical tracking and kerning (for vertical text).

For vertical text, you can disable kerning by default in Animate Preferences. If you do this and leave the kerning option selected in the Property inspector, kerning is applied to horizontal text only.

1 Using the Text tool , select one or more sentences, phrases, or text fields on the Stage.

2 In the Property inspector (Window > Properties), set the following options:

- To specify letter spacing (tracking and kerning), enter a value in the Letter Spacing field.
- To use a font's built-in kerning information, select Auto-Kern.

- To specify superscript or subscript character position, click the Toggle Superscript or Toggle Subscript button. The default position is Normal. Normal places text on the baseline, Superscript places text above the baseline (horizontal text) or to the right of the baseline (vertical text), and Subscript places text below the baseline (horizontal text) or to the left of the baseline (vertical text).

Set alignment, margins, indents, and line spacing

Alignment determines the position of each line of text in a paragraph relative to edges of the text field. Horizontal text is aligned relative to the left and right edges of the text field, and vertical text is aligned relative to the top and bottom edges of the text field. Text can be aligned to one edge of the text field, centered in the text field, or aligned to both edges of the text field (full justification).

Margins determine the amount of space between the border of a text field and its text. Indents determine the distance between the margin of a paragraph and the beginning of the first line.

Line spacing determines the distance between adjacent lines in a paragraph. For vertical text, line spacing adjusts the space between vertical columns.

Work with horizontal text

1 Using the Text tool T, select one or more text fields on the Stage.

2 In the Property inspector (Window > Properties), set the following options:

- To set alignment, click Left, Center, Right, or Full Justification.
- To set the left or right margin, enter values in the Margins text fields in the Paragraph section of the Property inspector.
- To specify indents, enter a value in the Indentation text field in the Paragraph section of the Property inspector.
- To specify line spacing, enter a value in the Line Spacing text field in the Paragraph section of the Property inspector.

Work with vertical text

1 Using the Text tool T, select one or more text fields on the Stage.

2 In the Property inspector (Window > Properties), set the following options:

- To set alignment, click Top, Center, Bottom, or Full Justification.
- To set the top or bottom margin, enter values in the Margins fields in the Paragraph section of the Property inspector.
- To specify indents, enter a value in the Indentation text field in the Paragraph section of the Property inspector.
- To specify line spacing, enter a value in the Line Spacing text field in the Paragraph section of the Property inspector.

Classic text anti-aliasing

Anti-aliasing lets you smooth the edges of onscreen text. The anti-aliasing options are particularly effective for rendering smaller font sizes. When anti-aliasing is enabled, all text in the current selection is affected. Anti-aliasing operates with text of all point sizes in the same way.

Anti-aliasing is supported for static, dynamic, and input text if the user has Flash® Player 7 or later. It is supported only for static text if the user has an earlier version of Flash Player.

When using small text in a Animate document, keep in mind the following guidelines:

- Sans serif text, such as Helvetica or Arial, appears clearer at small sizes than serif text.
- Some type styles, such as bold and italic, can make text less legible at small sizes.
- In some cases, text appears somewhat smaller than text of the same point size in other applications.

The Animate text rendering engine provides clear, high-quality text rendering in Animate (FLA) documents and published SWF files. The Anti-alias for Readability setting makes text more legible, particularly at small font sizes. Custom anti-aliasing lets you specify the thickness and sharpness of fonts used in individual text fields.

High quality anti-aliasing is automatically enabled whenever you publish to Flash Player 8 or later and Anti-Alias For Readability or Custom Anti-Alias is selected. Anti-Alias For Readability may cause a slight delay when you load Animate SWF files, especially if you are using four or five different character sets in the first frame of a Animate document. High-quality anti-aliasing may also increase Flash Player's memory usage. Using four or five fonts, for example, can increase memory usage by approximately 4 MB.

When the publish setting of your file is Adobe® Flash® Player 8 or later, and Anti-Alias For Readability or Custom Anti-Alias is your chosen anti-aliasing option, high-quality anti-aliasing applies to the following:

- Untransformed text that is scaled or rotated

  note: Although the text can be scaled or rotated, it must remain flat (that is, untransformed). For example, if you skew the fonts or otherwise manipulate the font shapes, Anti-Alias for Readability is automatically disabled.
- All font families (including bold, italic, and so on)
- Display sizes of up to 255 points
- Exporting to most non-Animate file formats (GIF or JPEG)

High-quality anti-aliasing is disabled under the following conditions:

- Flash Player 7 or earlier is the selected version of Flash Player.
- An anti-aliasing option other than Anti-Alias for Readability or Custom Anti-Alias is selected.
- Text is skewed or flipped.
- The FLA file is exported to a PNG file.

Work with text anti-aliasing

Animate provides improved font rasterization that lets you specify the anti-aliasing properties for fonts. The improved anti-aliasing capabilities are available only for SWF files published for Flash Player 8 or later. If you are publishing files for earlier versions of Flash Player, you can only use the Anti-Alias For Animation feature.

Note:

Anti-aliasing requires that the fonts used by a text field are embedded. If you do not embed the fonts, then the text field may appear blank for classic text. If changing the Anti-Alias setting to Use Device Fonts causes the text to appear incorrectly, then you need to embed the fonts. Animate automatically embeds the fonts for text that already exists in a text field created on the Stage. However, if you plan to allow the text to change at runtime, you should embed the fonts manually. For instructions, see Embed fonts for consistent text appearance.

Choose an anti-aliasing option for selected text

? In the Property inspector, choose one of the following options from the Anti-Aliasing pop-up menu:

Use Device Fonts Specifies that the SWF file use the fonts installed on the local computer to display the fonts. Typically, device fonts are legible at most font sizes. Although this option doesn't increase the size of the SWF file, it

forces you to rely on the fonts installed on the user's computer for font display. When using device fonts, choose only commonly installed font families.

You cannot use device fonts with rotated or vertical classic text. If you want to use rotated or vertical classic text, select another anti-alias mode and embed the fonts used by the text field.

Bitmap Text (No Anti-Alias) Turns off anti-aliasing and provides no text smoothing. The text is displayed using sharp edges, and the resulting SWF file size is increased because the font outlines are embedded in the file. Bitmap text is sharp at the exported size, but scales poorly.

Anti-Alias For Animation Creates a smoother animation by ignoring alignment and kerning information. This option creates a larger SWF file because font outlines are embedded. For legibility, use 10-point or larger type when specifying this option.

Anti-Alias For Readability Uses the Animate text rendering engine to improve the legibility of fonts, particularly at small sizes. This option creates a larger SWF file because font outlines are embedded. To use this option, you must publish to Flash Player 8 or later. (Do not use this option if you intend to animate text; instead, use Anti-Alias For Animation.)

Custom Anti-Alias Lets you modify the font's properties. Use Sharpness to specify the smoothness of the transition between the text edges and the background. Use Thickness to specify how thick the font anti-aliasing transition appears. (Larger values cause the characters to look thicker.) Specifying Custom Anti-Alias creates a larger SWF file because font outlines are embedded. To use this option, you must publish to Flash Player 8 or later.

Upgrade content for Flash 8 or later anti-aliasing

1. Open a FLA file created for use with Flash Player 7 or earlier.
2. In the Publish Settings dialog box (File > Publish Settings), select Flash Player 8 or Flash Player 9 from the Version pop-up menu.
3. Select the text field to apply the Anti-Alias For Readability or Custom Anti-Alias option to.
4. In the Property inspector, select Anti-Alias For Readability or Custom Anti-Alias from the Font Rendering Method pop-up menu.

Make classic text selectable

Static horizontal text or dynamic text can be selectable by users viewing your Animate application. (Input text is selectable by default.) After selecting text, the user can copy, cut, and then paste the text into a separate document.

1. Using the Text tool T, select the horizontal text that you want to make selectable.
2. In the Property inspector (Window > Properties), select Static Text or Dynamic Text.
3. Click Selectable.

Transforming text

You can create text effects by transforming text fields. For example, you can rotate, skew, flip, and scale text fields. (When you scale a text field as an object, the Property inspector does not reflect increases or decreases in point size.) The text in a transformed text field can still be edited, although severe transformations may make it difficult to read.

You can also animate text by using Timeline effects. For example, you can make text bounce, fade in or out, or explode.

Break Classic text apart

You can break apart Classic text to place each character in a separate text field. Then you can quickly distribute the text fields to separate layers and animate each field. However, you cannot break apart text in scrollable classic text fields.

You can also convert the text to its component lines and fills to reshape, erase, and otherwise manipulate it as a graphic. As with any other shape, you can individually group these converted characters, or change them to symbols and animate them. After you convert text to graphic lines and fills, you can no longer edit the text.

Note:

The Break Apart command for Classic text applies only to outline fonts such as TrueType fonts. Bitmap fonts disappear from the screen when you break them apart. PostScript fonts can be broken apart only on Macintosh systems.

1. Using the Selection tool , click a text field.
2. Select Modify > Break Apart.

   Each character in the selected text is placed in a separate text field. The text remains in the same position on the Stage.
3. Select Modify > Break Apart again to convert the characters to shapes on the Stage.

Create a text hyperlink

1. Select text or a text field:
   - Use the Text tool T to select text in a text field.
   - To link all the text in a text field, use the Selection tool to select a text field.
2. In the Link text field in the Options section of the Property inspector (Window > Properties), enter the URL to which you want to link the text field.

Note:

To create a link to an e-mail address, use the mailto: URL. For example, enter mailto:adamsmith@example.com.

Create scrolling classic text

There are several ways to create scrolling text in Animate:

- Make dynamic or input text fields scrollable by using menu commands or the text field handle. This does not add a scrollbar to the text field, but instead allows the user to scroll the text with the arrow keys (for text fields also set to Selectable) or the mouse wheel. The user must first click the text field to give it focus.
- Add an ActionScript 3.0 UIScrollbar component to a text field to make it scroll. For more information, see "Use the UIScrollBar component" in Using ActionScript 3.0 Components.
- In ActionScript 3.0, use the *scrollH* and *scrollV* properties of the *TextField* class.
- Add an ActionScript 2.0 ScrollBar component to a text field to make it scroll. For more information, see "UIScrollBar Component" in the ActionScript 2.0 Components Language Reference.
- In ActionScript 2.0, use the TextField object's *scroll* and *maxscroll* properties to control vertical scrolling and the *hscroll* and *maxhscroll* properties to control horizontal scrolling in a text field. See Example: Creating scrolling text in Learning ActionScript 2.0.

Make dynamic text scrollable

? Do one of the following:

- Shift-double-click the lower-right handle on the dynamic text field. The handle will turn from an unfilled square (non-scrollable) to a filled square (scrollable).
- Using the Selection tool , select the dynamic text field and then select Text > Scrollable.
- Select the dynamic text field with the Selection tool. Right-click (Windows) or Control-click (Macintosh) the dynamic text field and select Scrollable from the context menu.

Masking device font text

You can use a movie clip to mask device font text in another movie clip. (You cannot mask device fonts by using a mask layer on the Stage.) For this movie clip mask to function, the user must have Flash Player 6 (6.0.40.0) or later.

When you use a movie clip to mask device font text, Animate uses the rectangular bounding box of the mask as the masking shape. That is, if you create a nonrectangular movie clip mask for device font text in the Animate authoring environment, the mask that appears in the SWF file takes the shape of the rectangular bounding box of the mask, not the shape of the mask itself.

For more information on using a movie clip as a mask, see Using movie clips as masks in Learning ActionScript 2.0.

For a sample of device font masking, see the Animate Samples web page at www.adobe.com/go/learn_fl_samples. Download and decompress the Samples zip file and navigate to the Masking\DeviceFontMasking folder to access the sample.

Unicode text encoding in SWF applications

Flash Player 7 and later support Unicode text encoding for SWF files in Flash Player format. This support greatly enhances your ability to use multilanguage text in your SWF files, such as two languages within a single text field. Any user with Flash Player 7 or later can view multilanguage text in a Flash Player 7 or later application, regardless of the language used by the operating system running the player.

Drawing with the Pen tool

To draw precise paths as straight lines or smooth, flowing curves, use the Pen tool. When you draw with the Pen tool, click to create points on straight line segments and drag to create points on curved line segments. Adjust straight and curved line segments by adjusting points on the line.

The following video tutorial demonstrates how to use Pen tool in Animate:

Pen tool drawing states

The Pen tool provides feedback about its current drawing state by displaying different pointers. The various drawing states are indicated by the following pointers:

Initial Anchor Point pointer

The first pointer you see when you select the Pen tool. Indicates that the next mouse click on the Stage will create an initial anchor point, which is the beginning of a new path (all new paths begin with an initial anchor point). Any existing drawing paths are terminated.

Sequential Anchor Point pointer

Indicates that the next mouse click will create an anchor point with a line connecting it to the previous anchor point. This pointer is displayed during the creation of all user-defined anchor points except the initial anchor point of a path.

Add Anchor Point pointer

Indicates that the next mouse click will add an anchor point to an existing path. To add an anchor point, the path must be selected, and the Pen tool must not be over an existing anchor point. The existing path is redrawn based on the additional anchor point. Only one anchor point can be added at a time.

Delete Anchor Point pointer

Indicates that the next mouse click on an existing path will remove an anchor point. To remove an anchor point, the path must be selected with the Selection tool, and the pointer must be over an existing anchor point. The existing path is redrawn based on the removal of the anchor point. Only one anchor point can be removed at a time.

Continue Path pointer

Extends a new path from an existing anchor point. For this pointer to be activated, the mouse must be over an existing anchor point on a path. This pointer is only available when you are not currently drawing a path. The anchor point does not have to be one of the terminal anchor points of a path; any anchor point can be the location of a continued path.

Close Path pointer

Closes the path you're drawing on the starting point of the path. You can only close a path that you are currently drawing, and the existing anchor point must be the starting anchor point of the same path. The resulting path does not have any specified fill color settings applied to the enclosed shape; apply fill color separately.

Join Paths pointer

Similar to the Close Path Tool except that the mouse must not be over the initial anchor point of the same path. The pointer must be over either of the terminal points of a unique path. The segment may or may not be selected.***note:*** *Joining paths may or may not result in a closed shape.*

Retract Bezier Handle pointer

Appears when the mouse is over an anchor point whose Bezier handles are displayed. Clicking the mouse retracts the Bezier handles and causes the curved path across the anchor point to revert to straight segments.

Convert Anchor Point pointer

Converts a corner point without direction lines to a corner point with independent direction lines. To enable the Convert Anchor Point pointer, use the Shift + C modifier keys to toggle the Pen tool.

For a video tutorial about the Pen tool, see www.adobe.com/go/vid0120.

Draw straight lines with the Pen tool

The simplest path you can draw with the Pen tool is a straight line, made by clicking the Pen tool to create two anchor points. Continue to click to create a path made of straight line segments connected by corner points.

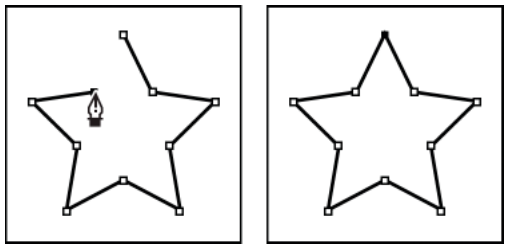
1. Select the Pen tool .
2. Position the Pen tool where the straight segment is to begin, and click to define the first anchor point. If direction lines appear, you accidentally dragged the Pen tool; choose Edit > Undo and click again.

   Note:

   The first segment you draw is not visible until you click a second anchor point (unless you've specified Show Pen Preview in the Drawing category of the Preferences dialog box).

3 Click again where you want the segment to end (Shift-click to constrain the angle of the segment to a multiple of 45°).

4 Continue clicking to set anchor points for additional straight segments.



Clicking Pen tool creates straight segments.

5 To complete the path as an open or closed shape, do one of the following:

- To complete an open path, double-click the last point, click the Pen tool in the Tools panel, or Control-click (Windows) or Command-click (Macintosh) anywhere away from the path.
- To close the path, position the Pen tool over the first (hollow) anchor point. A small circle appears next to the Pen tool pointer when it is positioned correctly. Click or drag to close the path.
- To complete the shape as is, select Edit > Deselect All, or select a different tool in the Tools panel.

Draw curves with the Pen tool

To create a curve, add an anchor point where a curve changes direction and drag the direction lines that shape the curve. The length and slope of the direction lines determine the shape of the curve.

Curves are easier to edit and your system can display and print them faster if you draw them using as few anchor points as possible. Using too many points can also introduce unwanted bumps in a curve. Instead, draw widely spaced anchor points, and practice shaping curves by adjusting the length and angles of the direction lines.

1 Select the Pen tool .

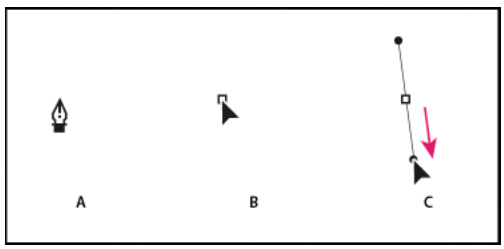
2 Position the Pen tool where the curve is to begin, and hold down the mouse button.

The first anchor point appears, and the Pen tool pointer changes to an arrowhead. (In Photoshop, the pointer changes only after you've started dragging.)

3 Drag to set the slope of the curve segment you're creating, and then release the mouse button.

In general, extend the direction line about one third of the distance to the next anchor point you plan to draw. (You can adjust one or both sides of the direction line later.)

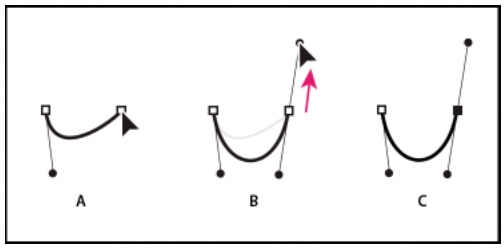
Hold down the Shift key to constrain the tool to multiples of 45°.



Drawing the first point in a curve
***A** Positioning Pen tool **B** Starting to drag (mouse button pressed) **C** Dragging to extend direction lines.*

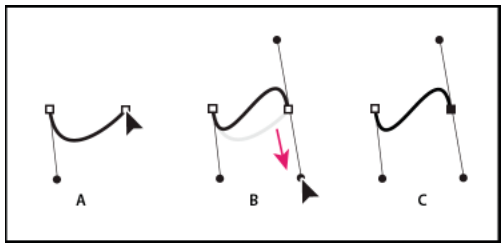
4 Position the Pen tool where the curve segment is to end, and do one of the following:

- To create a C-shaped curve, drag in a direction opposite to the previous direction line and release the mouse button.



Drawing the second point in a curve

- To create an S-shaped curve, drag in the same direction as the previous direction line and release the mouse button.



Drawing an S curve

5 To create a series of smooth curves, continue dragging the Pen tool from different locations. Place anchor points at the beginning and end of each curve, not at the tip of the curve.

To break out the direction lines of an anchor point, Alt-drag (Windows) or Option-drag (Macintosh) direction lines.

6 To complete the path, do one of the following:

- To close the path, position the Pen tool over the first (hollow) anchor point. A small circle appears next to the Pen tool pointer when it is positioned correctly. Click or drag to close the path.
- To leave the path open, Ctrl-click (Windows) or Command-click (Macintosh) anywhere away from all objects, select a different tool, or choose Edit > Deselect All.

Add or delete anchor points

Adding anchor points can give you more control over a path or it can extend an open path. However, it's a good idea not to add more points than necessary. A path with fewer points is easier to edit, display, and print. To reduce the complexity of a path, delete unnecessary points.

The toolbox contains three tools for adding or deleting points: the Pen tool , the Add Anchor Point tool , and the Delete Anchor Point tool .

By default, the Pen tool changes to the Add Anchor Point tool as you position it over a selected path, or to the Delete Anchor Point tool as you position it over an anchor point.

Note:

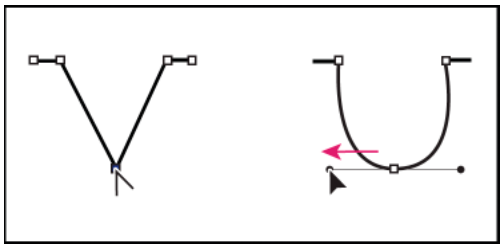
Don't use the Delete, Backspace, and Clear keys or the Edit > Cut or Edit > Clear commands to delete anchor points; these keys and commands delete the point and the line segments that connect to that point.

1. Select the path to modify.
2. Click and hold the mouse button on the Pen tool , then select the Pen tool , Add Anchor Point tool , or the Delete Anchor Point tool .
3. To add an anchor point, position the pointer over a path segment, and click. To delete an anchor point, position the pointer over an anchor point, and click.

Adjust anchor points on paths

When you draw a curve with the Pen tool, you create smooth points—anchor points on a continuous, curved path. When you draw a straight line segment or a straight line connected to a curved segment, you create corner points—anchor points on a straight path or at the juncture of a straight and a curved path.

By default, selected smooth points appear as hollow circles, and selected corner points appear as hollow squares.



Dragging a direction point out of a corner point to create a smooth point.

Move or add anchor points

- To move an anchor point, drag the point with the Subselection tool .
- To nudge an anchor point or points, select the point or points with the Subselection tool and use the arrow keys to move the point or points. Shift-click to select multiple points.
- To add an anchor point, click a line segment with the Pen tool. A plus (+) sign appears next to the Pen tool if an anchor point can be added to the selected line segment. If the line segment is not yet selected, click it with the Pen tool to select it, and then add an anchor point.

Delete anchor points

Deleting unneeded anchor points on a curved path optimizes the curve and reduces the resulting SWF file size.

- To delete a corner point, click the point once with the Pen tool. A minus (-) sign appears next to the Pen tool if an anchor point can be deleted from the selected line segment. If the line segment is not yet selected, click it with the Pen tool to select it, and then delete the anchor point.
- To delete a smooth point, click the point once with the Pen tool. A minus (-) sign appears next to the Pen tool if an anchor point can be deleted from the selected line segment. If the line segment is not yet selected, click it with the Pen tool to select it, and then delete the corner point. (Click once to convert the point to a corner point, and once more to delete the point.)

Convert segments between straight and curved

To convert segments in a line from straight segments to curve segments, convert corner points to smooth points. You can also do the reverse.

- To convert a corner point to a smooth point, use the Subselection tool to select the point, then Alt-drag (Windows) or Option-drag (Macintosh) the point to place the tangent handles.
- To convert a smooth point to a corner point, click the point with the Pen tool. The carat ^ marker next to the pointer indicates when it is over the smooth point.

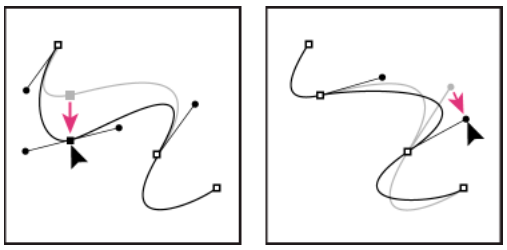
Adjust segments

To change the angle or length of the segment or adjust curved segments to change the slope or direction of the curve, adjust straight segments.

When you move a tangent handle on a smooth point, the curves on both sides of the point adjust. When you move a tangent handle on a corner point, only the curve on the same side of the point as the tangent handle adjusts.

- To adjust a straight segment, select the Subselection tool, and select a straight segment. Use the Subselection tool to drag an anchor point on the segment to a new position.
- To adjust a curve segment, select the Subselection tool and drag the segment.

  note: When you click the path, Animate shows the anchor points. Adjusting a segment with the Subselection tool can add points to the path.
- To adjust points or tangent handles on a curve, select the Subselection tool, and select an anchor point on a curved segment.
- To adjust the shape of the curve on either side of the anchor point, drag the anchor point, or drag the tangent handle. To constrain the curve to multiples of 45°, Shift-drag. To drag tangent handles individually, Alt-drag (Windows) or Option-drag (Macintosh).



Drag the anchor point, or drag the direction point.

Pen tool preferences

Specify preferences for the appearance of the Pen tool pointer, for previewing line segments as you draw, and for the appearance of selected anchor points. Selected line segments and anchor points use the outline color of the layer on which the lines and points appear.

1. Select the Pen tool, then select Edit > Preferences (Windows) or Animate > Preferences (Macintosh).
2. In the Category list, select Drawing.

3 Set the following options for the Pen tool:

Show Pen Preview Previews line segments as you draw. A preview of the line segment appears as you move the pointer around the Stage, before you click to create the end point of the segment. If this option is not selected, a line segment does not appear until you create the end point.

Show Solid Points Displays selected anchor points as hollow and deselected anchor points as solid. If this option is not chosen, selected anchor points are solid, and deselected anchor points are hollow.

Show Precise Cursors Specifies that the Pen tool pointer appears as a cross-hair pointer rather than the default Pen tool icon, for more precise placement of lines. To display the default Pen tool icon with the Pen tool, deselect the option.

***note**: To switch between the cross-hair pointer and the default Pen tool icon, press Caps Lock.*

4 Click OK.

Imported bitmaps in Animate CC

Work with imported bitmaps

When you import a bitmap into Animate, you can modify that bitmap and use it in your Animate document in a variety of ways.

If a Animate document displays an imported bitmap at a size larger than the original, the image may be distorted. To be sure that images are displayed properly, preview imported bitmaps.

When you select a bitmap on the Stage, the Property inspector displays the bitmap's symbol name and its pixel dimensions and position on the Stage. Using the Property inspector, you can swap an instance of a bitmap—that is, replace the instance with an instance of another bitmap in the current document.

Display the Property inspector with bitmap properties

1 Select an instance of a bitmap on the Stage.

2 Select Window > Properties.

Replace an instance of a bitmap with an instance of another bitmap

1 Select a bitmap instance on the Stage.

2 Select Window > Properties, and click Swap.

3 Select a bitmap to replace the one currently assigned to the instance.

Set bitmap properties

You can apply anti-aliasing to an imported bitmap to smooth the edges in the image. You can also select a compression option to reduce the bitmap file size and format the file for display on the web.

1 Select a bitmap in the Library panel and click the Properties button at the bottom of the Library panel.

2 Select Allow Smoothing. Smoothing improves the quality of bitmap images when they are scaled.

3 For Compression, select one of the following options:

Photo (JPEG) Compresses the image in JPEG format. To use the default compression quality specified for the imported image, select Use Document Default Quality. To specify a new quality compression setting, deselect Use Document Default Quality and enter a value between 1 and 100 in the Quality text field. (A higher setting preserves greater image integrity but yields a larger file size.)

Lossless (PNG/GIF) Compresses the image with lossless compression, in which no data is discarded from the image.

***note**: Use Photo compression for images with complex color or tonal variations, such as photographs or images with gradient fills. Use lossless compression for images with simple shapes and relatively few colors.*

4 To determine the results of the file compression, click Test. To determine if the selected compression setting is acceptable, compare the original file size to the compressed file size.

5 Click OK.

Note:

JPEG Quality settings that you select in the Publish Settings dialog box do not specify a quality setting for imported JPEG files. Specify a quality setting for each imported JPEG file in the Bitmap Properties dialog box.

(Animate CC only) Swapping multiple bitmaps

The Swap Bitmaps option allows you to swap symbols and bitmaps with a selected symbol or bitmaps.

1 In Animate Pro CC, select multiple bitmaps on the stage.

2 On the Properties panel, click SWAP.

3 On the Swap Symbol dialog, select the bitmap you want to replace all selected symbols/bitmaps with.

4 Click OK.

Import a bitmap at runtime

To add bitmaps to a document at runtime, use the ActionScript® 2.0 or the ActionScript 3.0 *BitmapData* command. To do so, specify a linkage identifier for the bitmap. For more information, see Assigning linkage to assets in the library in Learning ActionScript 2.0 or Exporting library symbols for ActionScript in the ActionScript 3.0 Developer's Guide.

1 Select the bitmap in the Library panel.

2 Do one of the following:

- Select Linkage from the Panel menu in the upper-right corner of the panel.
- Right-click (Windows) or Control-click (Macintosh) the bitmap name in the Library panel, and select Properties from the context menu.

  If the Linkage properties aren't visible in the Properties dialog box, click Advanced.

3 For Linkage, select Export For ActionScript.

4 Enter an identifier string in the text field, and click OK.

Apply a bitmap as a fill

To apply a bitmap as a fill to a graphic object, use the Color panel. Applying a bitmap as a fill tiles the bitmap to fill the object. The Gradient Transform tool allows you to scale, rotate, or skew an image and its bitmap fill.

1 To apply the fill to existing artwork, select a graphic object or objects on the Stage.

2 Select Window > Color.

3 Select Bitmap from the pop-up menu in the upper right of the panel.

4 To use a larger preview window to display more bitmaps in the current document, click the arrow in the lower-right corner to expand the Color panel.

5 Click a bitmap to select it.

The bitmap becomes the current fill color. If you selected artwork in step 1, the bitmap is applied as a fill to the artwork.

Edit a bitmap in an external editor

If you are editing a Fireworks PNG file imported as a flattened image, edit the PNG source file for the bitmap, when available.

Note:

You cannot edit bitmaps from Fireworks PNG files imported as editable objects in an external image editor.

If you have Fireworks 3 or later or another image-editing application installed on your system, you can start the application from Animate to edit an imported bitmap.

Edit a bitmap with Photoshop CS5 or later

Note:

If you are using CS5.5, you need to use Photoshop CS5.1 to access this feature.

1 In the Library panel, right-click (Windows) or Control-click (Macintosh) the bitmap's icon and select Edit With Photoshop CS5.

2 Perform the desired modifications to the file in Photoshop.

3 In Photoshop, select File > Save. (Do not change the file name or format.)

4 Return to Animate.

The file is automatically updated in Animate.

Edit a bitmap with Fireworks 3 or later

1 In the Library panel, right-click (Windows) or Control-click (Macintosh) the bitmap's icon and select Edit With Fireworks 3.

2 Specify whether to open the PNG source file or the bitmap file.

3 Perform the desired modifications to the file in Fireworks.

4 In Fireworks, select File > Update.

5 Return to Animate.

The file is automatically updated in Animate.

Edit a bitmap with another image-editing application

1 In the Library panel, right-click (Windows) or Control-click (Macintosh) the bitmap's icon, and select Edit With.

2 Select an image-editing application to open the bitmap file, and click OK.

3 Perform the desired modifications to the file in the image-editing application.

4 Save the file in the image-editing application.

The file is automatically updated in Animate.

5 Return to Animate to continue editing the document.

Break apart a bitmap and create a bitmap fill

Breaking apart a bitmap on the Stage separates the on-Stage image from its library item and converts it from a bitmap instance to a shape. When you break apart a bitmap, you can modify the bitmap with the Animate drawing and painting tools. Using the Magic Wand tool, you can select areas of the bitmap that contain the same or similar colors.

To paint with a broken-apart bitmap, select the bitmap with the Eyedropper tool and apply the bitmap as a fill with the Paint Bucket tool or another drawing tool.

Break a bitmap apart

1 Select a bitmap in the current scene.

2 Select Modify > Break Apart.

Change the fill of areas of a broken-apart bitmap

1 In the Tools Panel, select the Magic Wand tool. If the Magic Wand tool is not visible, click the Lasso Tool and select Magic Wand tool from the pop-up menu. Set the following options in the Property Inspector:

- For Threshold, enter a value between 1 and 200 to define how closely the color of adjacent pixels must match to be included in the selection. A higher number includes a broader range of colors. If you enter 0, only pixels of the exact same color as the first pixel you click are selected.
- For Smoothing, select an option to define how much the edges of the selection are smoothed.

2 To select an area, click the bitmap. To add to the selection, continue clicking.

3 To fill the selected areas in the bitmap, select the fill to use from the Fill Color control.

4 To apply the new fill, select the Paint Bucket tool and click anywhere in the selected area.

Convert a bitmap to a vector graphic

The Trace Bitmap command converts a bitmap into a vector graphic with editable, discrete areas of color. You manipulate the image as a vector graphic, and you can reduce the file size.

When you convert a bitmap to a vector graphic, the vector graphic is no longer linked to the bitmap symbol in the Library panel.

Note:

If the imported bitmap contains complex shapes and many colors, the converted vector graphic might have a larger file size than the original bitmap. To find a balance between file size and image quality, try a variety of settings in the Trace Bitmap dialog box.

You can also break apart a bitmap to modify the image with Animate drawing and painting tools.

1 Select a bitmap in the current scene.

2 Select Modify > Bitmap > Trace Bitmap.

3 Enter a Color Threshold value.

When two pixels are compared, if the difference in the RGB color values is less than the color threshold, the two pixels are considered the same color. As you increase the threshold value, you decrease the number of colors.

4 For Minimum Area, enter a value to set the number of surrounding pixels to consider when assigning a color to a pixel.

5 For Curve Fit, select an option to determine how smoothly outlines are drawn.

6 For Corner Threshold, select an option to determine whether sharp edges are retained or smoothed out.

To create a vector graphic that looks most like the original bitmap, enter the following values:

- Color Threshold: 10
- Minimum Area: 1 pixel
- Curve Fit: Pixels
- Corner Threshold: Many Corners

Use the Eyedropper tool to apply a bitmap fill

1 Select the Eyedropper tool and click the broken-apart bitmap on the Stage. The Eyedropper tool sets the bitmap to be the current fill and changes the active tool to the Paint Bucket.

2 Do one of the following:

- To apply the bitmap as a fill, click an existing graphic object with the Paint Bucket tool.
- Select the Oval, Rectangle, or Pen tool, and draw a new object. The object is filled with the broken-apart bitmap.

  To scale, rotate, or skew the bitmap fill, use the Free Transform tool.

Multilanguage text

About multilanguage text

You can configure a FLA file to display text in different languages depending on the language of the operating system that plays the Animate content.

Note:

Complete, updated Help is on the web. The application did not detect an Internet connection. For a complete version of this topic, click the link below or search complete Help at http://helpx.adobe.com/support.html.

You can configure a FLA file to display text in different languages depending on the language of the operating system that plays the Animate content.

See the discussion of multilanguage text in web Help to learn about working with multilanguage text in Animate.

Multilanguage text in Animate

You can include multilanguage text in your document in the following ways:

- (Deprecated with Animate CC) The Strings panel lets localizers edit strings in a central location in Animate or in external XML files with their preferred software or translation memory. Animate upports multiline strings in both the Strings panel and the XML files.
- Select which character sets to embed in your applications, which limits the number of character glyphs in your published SWF file and reduces its size.
- Use a Western-style keyboard to create text on the Stage in Chinese, Japanese, and Korean.
- If you have Unicode fonts installed on your system, enter text directly into a text field. Because the fonts are not embedded, your users must also have Unicode fonts.

Other, less common methods of including multilingual text in your Animatedocuments include the following:

- Include an external text file in a dynamic or input text field by using the *#include* action.
- Load external text or XML files into a Animate application at runtime by using the *loadVariables* or *getURL* actions, or the *LoadVars* or *XML* objects.
- Enter Unicode escape characters in the string value for a dynamic or input text field variable.
- Create an embedded font as a symbol in your Library.

  For Unicode-encoded text to appear correctly, users must have access to fonts containing the glyphs (characters) used in that text.

For a sample of multilingual content, see the Animate Samples page at www.adobe.com/go/learn_fl_samples. Download and decompress the Samples zip file and navigate to the Text\MultilingualContent folder to access the sample.

About fonts for Unicode-encoded text

When you use external files that are Unicode encoded, your users must have access to fonts containing all the glyphs used in your text files. By default, Animate stores the names of fonts used in dynamic or input text files. During SWF file playback, Flash Player 7 (and earlier versions) looks for those fonts on the operating system running the player.

If the text in a SWF file contains glyphs that the specified font does not support, both Flash Player 7 and Flash Player 8 attempt to locate a font on the user's system that supports those glyphs. The player cannot always locate an appropriate font. This behavior depends on the fonts available on the user's system, as well as on the operating system running Flash Player.

XML font embedding table

When you select ranges of fonts to embed in a FLA file, Animate uses the UnicodeTable.xml file to determine which characters to embed. The UnicodeTable.xml file contains ranges of characters required for various languages and resides in the user configuration folder of your computer. The file is located in the following directories:

- Windows: <boot drive>\Documents and Settings\<user>\Local Settings\Application Data\Adobe\Flash<version>\<language>\Configuration\FontEmbedding\
- Macintosh: <user>/Library/Application Support/Adobe/Flash <version>/<language>/Configuration/FontEmbedding/

The font set groupings are based on the Unicode Blocks as defined by the Unicode Consortium. To provide a simpler workflow, when you select a particular language, all related glyph ranges are embedded even if they are scattered into disjointed groupings.

For example, if you select Korean, the following Unicode character ranges are embedded:

3131-318E Hangul symbols

3200-321C Hangul specials

3260-327B Hangul specials

327F-327F Korean symbol

AC00-D7A3 Hangul symbols

If you select Korean + CJK, a larger font set is embedded:

3131-318E Hangul symbols

3200-321C Hangul specials

3260-327B Hangul specials

327F-327F Korean symbol

4E00-9FA5 CJK symbols

AC00-D7A3 Hangul symbols

F900-FA2D CJK symbols

For more information about specific Unicode ranges for different writing systems, see the Unicode 5.2.0 specification.

The following table gives more details about the font selections for embedded fonts:

Range	Description
Uppercase [A–Z]	Basic Latin uppercase glyphs, plus the space character 0x0020.
Lowercase [a–z]	Basic Latin lowercase glyphs, plus the space character 0x0020.
Numerals [0–9]	Basic Latin numeral glyphs
Punctuation [!@#%...]	Basic Latin punctuation
Basic Latin	Basic Latin glyphs within the Unicode range 0x0020 to 0x007E.
Japanese Kana	Hiragana and Katakana glyphs (including half-width forms)
Japanese Kanji – Level 1	Japanese Kanji characters
Japanese (All)	Japanese Kana and Kanji (including punctuation and special characters)
Basic Hangul	Most commonly used Korean characters, Roman characters, punctuations, and special characters/symbols
Hangul (All)	11,720 Korean characters (sorted by Hangul syllables), Roman characters, punctuations, and special characters/symbols)
Traditional Chinese – Level 1	5000 most commonly used Traditional Chinese characters used in Taiwan
Traditional Chinese (All)	All Traditional Chinese characters used in Taiwan and Hong Kong, and punctuations
Simplified Chinese – Level 1	6000 most commonly used Simplified Chinese characters used in mainland of China and punctuations
Chinese (All)	All Traditional and Simplified Chinese characters and punctuations
Thai	All Thai glyphs
Devanagari	All Devanagari glyphs
Latin I	Latin-1 Supplement range 0x00A1 to 0x00FF (including punctuation, superscripts and subscripts, currency symbols, and letter-like symbols)
Latin Extended A	Latin Extended-A range 0x0100 to 0x01FF (including punctuation, superscripts and subscripts, currency symbols, and letter-like symbols)
Latin Extended B	Latin Extended-B range 0x0180 to 0x024F (including punctuation, superscripts and subscripts, currency symbols, and letter-like symbols)
Latin Extended Add'l	Latin Extended Additional range 0x1E00 to 0x1EFF (including punctuation, superscripts and subscripts, currency symbols, and letter-like symbols)

Range	Description
Greek	Greek and Coptic, plus Greek Extended (including punctuation, superscripts and subscripts, currency symbols, and letter-like symbols)
Cyrillic	Cyrillic (including punctuation, superscripts and subscripts, currency symbols, and letter-like symbols)
Armenian	Armenian plus ligatures
Arabic	Arabic plus Presentation Forms-A and Presentation Forms-B
Hebrew	Hebrew plus Presentation Forms (including punctuation, superscripts and subscripts, currency symbols, and letter-like symbols)

Non-Unicode external files

If you load external text or XML files that are not Unicode-encoded into a Flash Player 7 application, the text in the external files does not appear correctly when Flash Player attempts to show them as Unicode. To tell Flash Player to use the traditional code page of the operating system that is running the player, add the following code as the first line of code in the first frame of the Animate application that is loading the data:

```
system.useCodepage = true;
```

Set the *system.useCodepage* property only once in a document; do not use it multiple times in a document to make the player interpret some external files as Unicode and some as other encoding, because this can yield unexpected results.

If you set the *system.useCodepage* property to *true*, the traditional code page of the operating system running the player must include the glyphs used in your external text file for the text to appear. For example, if you load an external text file that contains Chinese characters, those characters do not appear on a system that uses the CP1252 code page, because that code page does not include Chinese characters. To ensure that users on all platforms can view external text files used in your Animate applications, encode all external text files as Unicode and leave the *system.useCodepage* property set to *false* by default. This causes Flash Player to interpret the text as Unicode. For more information, see useCodepage (System.useCodepage property) in the ActionScript 2.0 Language Reference.

Text encoding

All text in a computer is encoded as a series of bytes. Many different forms of encoding (and therefore, different bytes) represent text. Different kinds of operating systems use different kinds of encoding for text. For example, Western Windows operating systems usually use CP1252 encoding; Western Macintosh operating systems usually use MacRoman encoding; Japanese Windows and Macintosh systems usually use Unicode encoding.

Unicode can encode most languages and characters used throughout the world. The other forms of text encoding that computers use are subsets of the Unicode format, tailored to specific regions of the world. Some of these forms are compatible in some areas and incompatible in other areas, so using the correct encoding is critical.

Unicode has several forms. Flash Player versions 6 and 7 and later support text or external files in the 8-bit Unicode format UTF-8, and in the 16-bit Unicode formats UTF-16 BE (Big Endian) and UTF-16 LE (Little Endian).

Unicode and Flash Player

Flash Player 6 and later versions support Unicode text encoding. Users with Flash Player 6 or later can view multilanguage text, regardless of the language that the operating system running the player uses, if they have the correct fonts installed.

Flash Player assumes that all external text files associated with a Flash Player application are Unicode encoded, unless you tell the player otherwise.

For Animate applications in Flash Player 5 or earlier that are authored in Flash MX or earlier, Flash Player 6 and earlier versions display the text by using the traditional code page of the operating system running the player.

For background information on Unicode, see Unicode.org.

Text encoding in Flash Player

By default, Flash Player 7 and later assumes that all text it encounters is Unicode encoded. If your document loads external text or XML files, the text in these files should be UTF-8 encoded. Create these files by using the Strings panel or using a text or HTML editor that can save the files in Unicode format.

Unicode encoding formats that Flash Player supports

When reading text data in Animate, Flash Player looks at the first two bytes in the file to detect a byte order mark (BOM), a standard formatting convention used to identify the Unicode encoding format. If no BOM is detected, the text encoding is interpreted as UTF-8 (an 8-bit encoding format). It is recommended that you use UTF-8 encoding in your applications.

If Flash Player detects either of the following BOMs, the text encoding format is interpreted as follows:

- If the first byte of the file is OxFE and the second is OxFF, the encoding is interpreted as UTF-16 BE (Big Endian). This is used for Macintosh operating systems.
- If the first byte of the file is OxFF and the second is OxFE, the encoding is interpreted as UTF-16 LE (Little Endian). This is used for Windows operating systems.

  Most text editors that can save files in UTF-16BE or LE automatically add the BOMs to the files.

  ***note**: If you set the system.useCodepage property to true, the text is interpreted using the traditional code page of the operating system that is running the player; it is not interpreted as Unicode.*

Encoding in external XML files

You cannot change the encoding of an XML file by changing the encoding tag. Flash Player identifies the encoding of an external XML file using the same rules as for all external files. If no BOM is encountered at the beginning of the file, the file is assumed to be in UTF-8 encoding. If a BOM is encountered, the file is interpreted as UTF-16BE or LE.

Creating multilanguage text

You can configure a FLA file to display text in different languages depending on the language of the operating system that plays the Animate content.

Note:

Complete, updated Help is on the web. The application did not detect an Internet connection. For a complete version of this topic, click the link below or search complete Help at http://helpx.adobe.com/support.html.

You can configure a FLA file to display text in different languages depending on the language of the operating system that plays the Animate content.

See the discussion of creating multilanguage text in web Help to learn about adding multilanguage text to your FLA files.

Workflow for authoring multilanguage text with the Strings panel

The Strings panel lets you create and update multilingual content. You can specify content for text fields that span multiple languages, and have Animate automatically determine the content that should appear in a certain language based on the language of the computer running Flash Player.

The following steps describe the general workflow:

Author a FLA file in one language.

Any text to enter in another language must be in a dynamic or input text field.

In the Strings Panel Settings dialog box, select the languages to include and designate one of them as the default language.

A column for the language is added to the Strings panel. When you save, test, or publish the application, a folder with an XML file is created for each language.

In the Strings panel, encode each text string with an ID.

Publish the application.

A folder is created for each language you select, and within each language folder is an XML file for that language.

Send the published FLA file and XML folders and files to your translators.

Author in your native language and let the translators make the translation. They can use translation software directly in the XML files or in the FLA file.

When you receive the translations from your translators, import the translated XML files back into the FLA file.

Note:

Flash Pro CS4 files with anti-aliased classic, dynamic text fields populated from the Strings panel may not display properly when updated to Flash Pro CS5. This is due to changes in font embedding in Flash Pro CS5. To solve this problem, manually embed the fonts used by the text fields. For instructions, see Embed fonts for consistent text appearance.

Select and remove languages for translation

As many as 100 languages can appear on the Stage and in the Strings panel for translation. Each language you select becomes a column in the Strings panel. To show the text on the Stage in any of the languages you selected, change the Stage language. The selected language appears when you publish or test the file.

When selecting languages, use any of the languages provided in the menu, as well as any other Unicode-supported language.

Select a language

1. Select Window > Other Panels > Strings, and click Settings.
2. Add a language by doing one of the following:
   - In the Languages box, highlight a language to select, and click Add.
   - If the language does not appear in the Languages box, in the blank field below the Languages box, type a language code in the format *xx*. (The language code is from ISO 639-1.) Click Add.
3. Repeat step the previous step until you have added all the necessary languages.
4. Select a default language from the Default runtime language menu. This language appears on systems that do not have one of the active languages you selected.
5. To load an XML file for the languages from a different URL at runtime, type the URL in the URL text field and click OK.

   A column for each selected language appears in the Strings panel. The columns appear in alphabetical order.
6. Save the FLA file. When you save the FLA file, a folder for each language you selected is created in the same folder indicated in the SWF publish path. If no SWF publish path has been selected, it is created in the folder the FLA file resides in. Within each language file an XML file is created that is used to load translated text.

Remove a language

1. Select Window > Other Panels > Strings, and click Settings.
2. In the Active languages field, highlight a language and click Remove.
3. Repeat step 3 until you have removed all the unwanted languages.
4. When you finish removing languages, click OK.

   The column for each removed language no longer appears in the Strings panel.

Note:

When you remove a language from the Strings panel, the language XML file is not deleted from the local file system. This lets you add the language back into the Strings panel by using the previous XML file, and prevents accidental deletion. To completely remove the language, you must delete or replace the language XML file.

Add strings to the Strings panel

Assign text strings to the Strings panel in the following ways:

- Assign a string ID to a dynamic or input text field
- Add a string to the Strings panel without assigning it to a text field
- Assign an existing string ID to an existing dynamic or input text field

Assign a string ID to a text field

1. Select Window > Other Panels > Strings.
2. Select the Text tool. On the Stage, create an input or dynamic text field.
3. While the text field is selected, type a unique ID in the ID field in the Strings panel.
4. Click the Settings button and select a language or languages from the list in the Settings dialog box. The languages you select should include the default language you wish to use and any other languages in which you plan to publish your work.
5. Click Apply.

Note:

If a static text field is selected on the Stage, the Stage text selection section on the Strings panel displays the message "Static text cannot have an ID associated with it." If a nontext item is selected or multiple items are selected, the message "Current selection cannot have an ID associated with it" appears.

Add a string ID to the Strings panel without assigning it to a text field

1. Select Window > Other Panels > Strings.
2. Click the Settings button and select a language or languages from the list in the Settings dialog box. The languages you select should include the default language you wish to use and any other languages in which you plan to publish your work.
3. Type a new string ID and new string in the Strings panel, and click Apply.

Assign an existing ID to a text field

1. Select the Text tool. On the Stage, create an input or dynamic text field.
2. Type the name of an existing ID in the ID section of the Strings panel, and click Apply.

Note:

Press Shift+Enter to apply the ID to the text field, or Enter if the focus is on the ID field.

Editing strings in the Strings panel

After you enter text strings in the Strings panel, use one of the following methods to edit the text strings:

- Directly in the Strings panel cells.
- On the Stage in the language selected as the Stage language, using features such as find and replace and spelling checking. Text that you change using these features is changed on the Stage and in the Strings panel.
- Edit the XML file directly.

Change the language displayed on the Stage

1. Select Window > Other Panels > Strings.
2. In the Stage Language menu, select the language to use for the Stage language. This must be a language you added as an available language.

   After you change the Stage language, any new text you type on the Stage appears in that language. If you previously entered text strings for the language in the Strings panel, any text on the Stage appears in the selected language. If not, the text fields already on the Stage are blank.

Enter Asian characters on a Western keyboard

With Animate, you can use Input Method Editors (IMEs) and standard Western keyboards to enter Asian characters on the Stage. Animate supports more than two dozen IMEs.

For example, to create a website that reaches a broad range of Asian viewers, you can use a standard Western (QWERTY) keyboard and change the IME to create text in Chinese, Japanese, and Korean.

Note:

This feature affects only text input on the Stage, not text entered in the Actions panel. This feature is available for all supported Windows operating systems and Mac OS X.

1. Select Edit > Preferences (Windows) or Animate > Preferences (Macintosh), and click Text in the Category list.
2. Under Input Method, select one of the options to input characters from a Western keyboard. The default is Chinese and Japanese and it should also be selected for Western languages.

Publishing multilanguage FLA files

When you save, publish, or test the FLA file, a folder with an XML file is created for each available language you selected in the Strings panel. The default location for the XML folders and files is the same folder indicated as the SWF publish path. If no SWF publish path was selected, the XML folder and files are saved in the folder in which the FLA file is located. For example, if you have a file named Test in the mystuff folder, and you selected English (en), German (de), and Spanish (es) as active languages, and you did not select a SWF publish path, when you save the FLA file, the following folder structure is created:

```
\mystuff\Test.fla
\mystuff\de\Test_de.xml
\mystuff\en\Test_en.xml
\mystuff\es\Test_es.xml
```

When you start a SWF file, you also need to start the associated XML files with the string translations in the web server. The first frame that contains text cannot appear until the entire XML file is downloaded.

Manually replace strings at publish time

Manually replace strings by using the Stage language when you publish your Animate SWF file. This method uses the Stage language to replace all instances of input and dynamic text with an associated string ID. In this case, text strings are only updated when you publish the SWF file; language detection is not automatic, and you must publish a SWF file for each language to support.

1 Select Window > Other Panels > Strings, and click Settings.

2 Select the Replace Strings Automatically At Runtime check box.

Use automatic language detection with the default language

You can change the default runtime language to any language that you selected as an available language. When automatic language detection is on, and you view the SWF file on the system that uses the language, any system that is set to a language other than one of the active languages uses the default language. For example, if you set your default language to English and you select ja, en, and fr as active languages, users who have their system language set to Japanese, English, or French automatically see text strings in their chosen language. However, users who have their system language set to Swedish, which is not one of the selected languages, automatically see text strings in the default language you selected—in this case, English.

1 Select Window > Other Panels > Strings, and click Settings.

2 In the Default language menu, select the default language. This must be a language you added as an available language.

3 To enable automatic language detection, select Replace Strings Automatically At Runtime, and click OK.

Animate generates the following ActionScript®, which stores the language XML file paths. Use this code as a starting point for your own language detection script.

```
import mx.lang.Locale;
Locale.setFlaName("<flaFileName>");
Locale.setDefaultLang("langcode");
Locale.addXMLPath("langcode", "url/langcode/flaname_langcode.xml");
```

Note:

The ActionScript code that the Strings panel generates does not use the Locale.initialize function. Decide how to call this function based on the language detection customizations your project requires.

Use custom language detection

To access the language XML files to control text replacement at a time that you designate, create your own custom component or use ActionScript code. For example, you might create a pop-up menu that lets users select a language for viewing content.

For information on writing ActionScript code to create custom language detection, see About the Strings panel in Learning ActionScript 2.0.

1 Select Window > Other Panels > Strings, and click Settings.

2 In the Default Language menu, select the default language.

This must be a language you added as an available language.

3 Select the Replace Strings Via ActionScript check box, and click OK.

Animate generates the following ActionScript code, which stores the language XML file paths. Use this code as a starting point for your own language detection script.

```
import mx.lang.Locale;
Locale.setFlaName("<flaFileName>");
Locale.setDefaultLang("langcode");
Locale.addXMLPath("langcode", "url/langcode/flaname_langcode.xml");
```

Note:

The ActionScript that the Strings panel generates does not use the Locale.initialize function. Decide how to call this function based on the language detection customizations your project requires.

Additional resources

- Article: Formatting text for localized Animate projects (Adobe.com)

XML file format for multilanguage text

When you use multilanguage text in Animate, the text is stored in XML files.

Note:

Complete, updated Help is on the web. The application did not detect an Internet connection. For a complete version of this topic, click the link below or search complete Help at http://helpx.adobe.com/support.html.

When you use multilanguage text in Animate, the text is stored in XML files.

See the discussion of the XML file format in web Help to learn about working with these XML files and importing them into a FLA file.

About the XML file format

Exported XML is in UTF-8 format and follows the XML Localization Interchange File Format (XLIFF)1.0 standard. It defines a specification for an extensible localization interchange format that lets any software provider produce a single interchange format that can be delivered to, and understood by, any localization service provider. For more information about XLIFF, see www.oasis-open.org/committees/xliff/.

XLIFF examples

If any of the following characters are entered in the Strings panel, they are replaced by the appropriate entity reference when written to XML files:

Character	Replaced by
&	&
'	'
"	"
<	<
>	>

Exported XML file sample

The following examples show what an XML file that the Strings panel generates looks like in the source language—in this example, English—and in another language—in this example, French:

English source version sample:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE xliff PUBLIC "-//XLIFF//DTD XLIFF//EN"
"http://www.oasis-open.org/committees/xliff/documents/xliff.dtd" >
<xliff version="1.0" xml:lang="en">
<file datatype="plaintext" original="MultiLingualContent.fla" source-language="EN">
       <header></header>
       <body>
           <trans-unit id="001" resname="IDS_GREETINGS">
               <source>welcome to our web site!</source>
           </trans-unit>
           <trans-unit id="002" resname="IDS_MAILING LIST">
               <source>Would you like to be on our mailing list?</source>
           </trans-unit>
           <trans-unit id="003" resname="IDS_SEE YOU">
               <source>see you soon!</source>
           </trans-unit>
           <trans-unit id="004" resname="IDS_TEST">
               <source></source>
           </trans-unit>
       </body>
   </file>
</xliff>
```

French source version sample:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE xliff PUBLIC "-//XLIFF//DTD XLIFF//EN"
"http://www.oasis-open.org/committees/xliff/documents/xliff.dtd" >
<xliff version="1.0" xml:lang="fr">
<file datatype="plaintext" original="MultiLingualContent.fla" source-language="EN">
       <header></header>
       <body>
           <trans-unit id="001" resname="IDS_GREETINGS">
               <source>Bienvenue sur notre site web!</source>
           </trans-unit>
           <trans-unit id="002" resname="IDS_MAILING LIST">
               <source>Voudriez-vous être sur notre liste de diffusion?</source>
           </trans-unit>
           <trans-unit id="003" resname="IDS_SEE YOU">
               <source>A bientôt!</source>
           </trans-unit>
           <trans-unit id="004" resname="IDS_TEST">
               <source></source>
           </trans-unit>
       </body>
   </file>
</xliff>
```

Translate text in the Strings panel or an XML file

When sending files to translators, include not only the FLA file but also the folders for the XML files and the XML file for each language.

Translators can either work directly in the language columns in the Strings panel or work in the XML files for each language to translate the FLA file to selected languages. If you translate directly in the XML file, you must either import the XML file to the Strings panel or save it in the default directory for that language.

Translate text in the Strings panel

1. Select Window > Other Panels > Strings.
2. For each language to be translated, select the appropriate language column, then type the translated text for that language to be associated with each string ID.
3. To show the text on the Stage in the language you selected, select the language in the Stage Language field.
4. When you are finished, save, publish, or test the file.

   All XML files for all languages are overwritten with the information in the Strings panel.

   Note:

   To preserve the translation in an XML file, save it in a different folder.

Translate text in an XML file

1. Using an XML file editor or translating software, open the folder for the desired language, then the XML file for that language. The XML file is populated with the IDs for each text string.
2. Enter the text string for the language next to the ID.
3. If necessary, import the translated XML file into the Strings panel.

Import an XML file into the Strings panel

After you modify an XML file, if you place it in the folder specified in the Strings panel for that language, the XML file is loaded into the Animate document (FLA file) when it opens.

Regardless of where the XML file you imported was located, when you save, test, or publish the FLA file, a folder for each language in the Strings panel and an XML file for each language are created in the location indicated for publishing SWF files. If no publish path is indicated, the folder and file are saved in the same folder in which the FLA file is located. The XML files that the Strings panel generates are always populated with the information in the Strings panel.

Alternatively, import an XML file into the Strings panel from another location. After you import it, when you save, test, or publish the file, the XML file in the folder specified for that language is overwritten. You cannot import an XML file for a language unless it is already selected as an available language in the Strings panel. You can also add a language and import an XML file with the translation for that language.

1. Select Window > Other Panels > Strings, and click Import XML.
2. In the Select a Language menu, select the language of the XML file you are importing, and click OK.
3. Navigate to the folder and XML file to import.

   The XML information is loaded into the column in the Strings panel for the language you selected in step 3.

Note:

Select the same language in steps 2 and 3. Otherwise, you could, for example, import a French XML file into the column for German.

Multilanguage text and ActionScript

You can control multilanguage text and import multilanguage XML files with ActionScript®.

Note:

Complete, updated Help is on the web. The application did not detect an Internet connection. For a complete version of this topic, click the link below or search complete http://helpx.adobe.com/support.html.

You can control multilanguage text and import multilanguage XML files with ActionScript®.

See the discussion of creating multilanguage text in web Help to learn about working with multilanguage text in ActionScript.

Use ActionScript to load external files

To load existing XML data, or use a different format for the XML file, use the *loadVariables* action, the *getURL* action, the *LoadVars* object, or the *XML* object to create a document that contains multilanguage text by placing the text in an external text or XML file and loading the file into the movie clip at runtime.

Save the external file in UTF-8 (recommended), UTF-16BE, or UTF-16LE format, using an application that supports the format. If you are using UTF-16BE or UTF-16LE format, the file must begin with a BOM to identify the encoding format to Flash Player. The following table lists the BOM to include to identify the encoding:***note**: Most text editors that can save files in UTF-16BE or LE automatically add the BOMs to the files.*

UTF Format	First Byte	Second Byte
UTF-16BE	OxFE	OxFF
UTF-16LE	OxFF	OxFE

Note:

If the external file is an XML file, you cannot use an XML encoding tag to change the file encoding. Save the file in a supported Unicode format.

1. In the Animate authoring application, create a dynamic or input text field to show the text in the document.
2. In the Property inspector, with the text field selected, assign an instance name to the text field.
3. Outside of Animate, create a text or XML file that defines the value for the text field variable.
4. Save the XML file in UTF-8 (recommended), UTF-16BE, or UTF-16LE format.
5. Use one of the following ActionScript procedures to reference the external file and load it into the dynamic or input text field:
   - Use the *loadVariables* action to load an external file.
   - Use the *getURL* action to load an external file from a specified URL.
   - Use the *LoadVars* object (a predefined client-server object) to load an external text file from a specified URL.
   - Use the *XML* object (a predefined client-server object) to load an external XML file from a specified URL. For more information, see XML in the ActionScript Language Reference.

Create multilanguage documents using the #include action

To create a document that contains multiple languages, use the *#include* action.

Use an application that supports UTF-8 encoding, such as Dreamweaver, to save the text file in UTF-8 format.

To identify the file as Unicode to the Animate authoring tool, include the following header as the first line of the file:

```
//!-- UTF8
```

Note:

Include a space after the second dash (-).

By default, the Animate authoring application assumes that external files that use the *#include* action are encoded in the traditional code page of the operating system running the authoring tool. Using the *//!-- UTF8* header in a file tells the authoring tool that the external file is encoded as UTF-8.

1. In the Animate authoring tool, create a dynamic or input text field to display the text in the document.
2. In the Property inspector, with the text field selected, assign an instance name to the text field.
3. Outside of Animate, create a text file that defines the value for the text field variable. Add the *//!-- UTF8* header at the beginning of the file.
4. Save the text file in UTF-8 format.
5. To include the external file in the dynamic or input text field, use the *#include* directive. For more information, see *#include* directive in the ActionScript Language Reference.

Creating multilanguage documents by using text variables

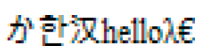
To include Unicode-encoded contents in text variables, use the syntax *\\uXXXX*, where *XXXX* is the four-digit hexadecimal code point, or escape character, for the Unicode character. The Animate authoring tool supports Unicode escape characters through *\\uFFFF*. To find the code points for Unicode characters, see the Unicode Standard at Unicode.org.

You can use Unicode escape characters only in text field variables. You cannot include Unicode escape characters in external text or XML files; Flash Player 6 does not recognize Unicode escape characters in external files.

For example, to set a dynamic text field (with the *myTextVar* instance name) that contains Japanese, Korean, Chinese, English, and Greek characters and the Euro sign, enter the following:

```
myTextVar.text = "\u304B\uD55C\u6C49hello\u03BB\u20AC";
```

When the SWF file plays, the following characters appear in the text field:



For best results when creating a text field that contains multiple languages, use a font that includes all the glyphs your text needs.

Using the XMLConnector component to connect to external XML files

Use the version 2 XMLConnector component to connect to an external XML document to bind to properties in the document. Its purpose is to read or write XML documents by using HTTP *GET* operations, *POST* operations, or both. It acts as a connector between other components and external XML documents. The XMLConnector communicates with components in your application by using either data-binding features in the Animate authoring environment or ActionScript code. For more information, see XML Connector component in the ActionScript Components Language Reference.

Placing artwork into Animate

About importing artwork into Animate

Adobe Animate can use artwork created in other applications. You can import vector graphics and bitmaps in a variety of file formats. If you have QuickTime® 4 or later installed on your system, you can import additional vector or bitmap file formats. You can import Adobe® FreeHand® files (version MX and earlier) and Adobe® Fireworks® PNG files directly into Animate, preserving attributes from those formats.

Graphic files that you import into Animate must be at least 2 pixels x 2 pixels in size.

To load JPEG files into a Animate SWF file during runtime, use the *loadMovie* action or method. For detailed information, see loadMovie (MovieClip.loadMovie method) in ActionScript 2.0 Language Reference or Working with movie clips in the ActionScript 3.0 Developer's Guide.

Animate imports vector graphics, bitmaps, and sequences of images as follows:

- When you import Adobe® Illustrator® and Adobe® Photoshop® files into Animate, you can specify import options that let you preserve most of your artwork's visual data, and the ability to maintain the editability of certain visual attributes with the Animate authoring environment.
- When you import vector images into Animate from FreeHand, select options for preserving FreeHand layers, pages, and text blocks.
- When you import PNG images from Fireworks, import files as editable objects to modify in Animate, or as flattened files to edit and update in Fireworks.
- Select options for preserving images, text, and guides.

  note: If you import a PNG file from Fireworks by cutting and pasting, the file is converted to a bitmap.
- Vector images from SWF and Windows® Metafile Format (WMF) files that you import directly into a Animate document (instead of into a library) are imported as a group in the current layer.
- Bitmaps (scanned photographs, BMP files) that you import directly into a Animate document are imported as single objects in the current layer. Animate preserves the transparency settings of imported bitmaps. Because importing a bitmap can increase the file size of a SWF file, consider compressing imported bitmaps.

  note: Bitmap transparency might not be preserved when bitmaps are imported by dragging and dropping from an application or desktop to Animate. To preserve transparency, use the File > Import To Stage or Import To Library command for importing.
- Any sequence of images (for example, a PICT or BMP sequence) that you import directly into a Animate document is imported as successive keyframes of the current layer.

Supported file formats for import

Note:

For a complete list of every file format supported by Animate for import, export, or edit, see the Supported File Formats TechNote.

Graphics formats

Animate can import different vector or bitmap file formats depending on whether QuickTime 4 or later is installed on your system. Using Animate with QuickTime 4 installed is especially useful for collaborative projects in which authors work on both Windows and Macintosh platforms. QuickTime 4 extends support for certain file formats (including PICT, QuickTime Movie, and others) to both platforms.

You can import the following vector or bitmap file formats into Animate 8 or later, regardless of whether QuickTime 4 is installed:

File type	Extension	Windows	Macintosh
Adobe Illustrator (version 10 or earlier)	.ai	•	•
Adobe Photoshop	.psd	•	•
AutoCAD® DXF	.dxf	•	•
Bitmap	.bmp	•	•
Enhanced Windows Metafile	.emf	•	
FutureSplash Player	.spl	•	•
GIF and animated GIF	.gif	•	•
JPEG	.jpg	•	•
PNG	.png	•	•
Flash Player 6/7	.swf	•	•
Windows Metafile	.wmf	•	•
Adobe XML Graphic file	.fxg	•	•

You can import the following bitmap file formats into Animate only if QuickTime 4 or later is installed:

File type	Extension	Windows	Macintosh
QuickTime Image	.qtif	•	•
TIFF	.tif	•	•

Sound formats

Animate can import the following audio formats:

File type	Extension	Windows	Macintosh
Adobe Soundbooth	.asnd	•	•
Wave	.wav	•	
Audio Interchange File Format	.aiff		•
MP3	.mp3	•	•

Animate can import the following audio formats only if QuickTime 4 or later is installed:

File type	Extension	Windows	Macintosh
Audio Interchange File Format	.aiff	•	•
Sound Designer II	.sd2		•
Sound-only QuickTime movies	.mov, .qt	•	•
Sun AU	.au	•	•
System 7 sounds	.snd		•
Wave	.wav	•	•

Video formats

Animate can import the following video formats:

File type	Extension	Windows	Macintosh
Video for Adobe Animate	.flv, .f4v	•	•
QuickTime Movie	.mov, .qt	•	•
Video for Windows	.avi	•	•
MPEG	.mpg, .m1v, .m2p, .m2t, .m2ts, .mts, .tod, .mpe, .mpeg	•	•
MPEG-4	.mp4, .m4v, .avc	•	•
Digital Video	.dv, .dvi	•	•
3GPP/3GPP2 for Mobile Devices	.3gp, .3gpp, .3gp2, .3gpp2, .3p2	•	•

Import artwork in Animate

Animate lets you import artwork in various file formats either directly to the Stage, or to the library.

Import a file into Animate

1 Do one of the following:

- To import a file directly into the current Animate document, select File > Import > Import To Stage.
- To import a file into the library for the current Animate document, select File > Import > Import To Library. (To use a library item in a document, drag it onto the Stage.)

2 Select a file format from the Files Of Type (Windows) or Show (Macintosh) pop-up menu.

3 Navigate to the desired file and select it. If an imported file has multiple layers, Animate might create new layers (depending on the import file type). Any new layers appear in the Timeline.

4 Click Open.

5 If the name of the file you are importing ends with a number and additional sequentially numbered files are in the same folder, do one of the following:

Note: (Windows 8 only) If a PSD file containing text is imported with the Vector Outline option selected, you cannot edit the anchor points for the vector object. This is observed with PSD files that were created using fonts unavailable in Windows 8.

- To import all the sequential files, click Yes.
- To import only the specified file, click No.

The following are examples of filenames that can be used as a sequence:

Frame001.gif, Frame002.gif, Frame003.gif

Bird 1, Bird 2, Bird 3

Walk-001.ai, Walk-002.ai, Walk-003.ai

Paste a bitmap from another application directly into the current Animate document

1 Copy the image in the other application.

2 In Animate, select Edit > Paste In Center.

Importing FXG files

The FXG format allows Animate to exchange graphics with other Adobe applications such as Adobe Illustrator, Fireworks, and Photoshop with all of the complex graphic information preserved. Animate allows you to import FXG files (2.0 version only) as well as save selections of objects on the Stage or the entire Stage in FXG format. For more information about FXG files, see About FXG files.

- To import an FXG file, choose File > Import > Import to Stage or Import to Library and select the FXG file you want to open.

About AutoCAD DXF files

Animate supports the AutoCAD® DXF format in AutoCAD 10.

DXF files do not support the standard system fonts. Animate tries to map fonts appropriately, but the results can be unpredictable, particularly for text alignment.

Because the DXF format does not support solid fills, filled areas are exported as outlines only. For this reason, the DXF format is most appropriate for line drawings, such as floor plans and maps.

You can import two-dimensional DXF files into Animate. Animate does not support three-dimensional DXF files.

Although Animate doesn't support scaling in a DXF file, all imported DXF files produce 12-inch x 12-inch files that you can scale using Modify > Transform > Scale. Also, Animate supports only ASCII DXF files. If your DXF files are binary, convert them to ASCII before importing them into Animate.

Loading artwork with ActionScript

With ActionScript, you can load external image files or assets from the Library at runtime.

Opening Flash CS6 files with Animate CC

As introduced in CS5, Animate CC continues to support XFL file format, both as a compressed .fla and the uncompressed .xfl file types. Animate also continues to support opening of files last saved in any, earlier version of Animate. Supported file types include opening not only the XFL files saved in CS5.5, and CS6, but also the older "binary" .fla files saved in CS4 and earlier.

When saving a file, Animate CC continues to provide the options of saving to a Animate document (.fla) or uncompressed document (.xfl). The resulting XFL file is internally stamped with the Animate CC file version. However, since CS5.5 and later releases are able to open "future" versions of XFL files, CS5.5 and CS6 can both also open Animate CC files. Consequently, you will not see options in the Save As Type drop-down list to explicitly save to an older version of Animate.

However, as will be described below, some features are deprecated in Animate CC. This may affect files that were created with older versions of Animate. It is important that you make necessary changes to these files with an older version of Animate, before opening them in Animate CC.

Conversion of content created using dropped Features

If you open a file, previously saved with an earlier version of Animate, you may encounter a feature that is no longer supported in Animate CC. And a warning message indicating the same is displayed. When you affirm that you want to continue with the conversion, Animate CC will automatically convert the deprecated content into a supported content type. Note that Animate CC will display a warning if this occurs, so that you can save with a different file name. This allows you to keep an archive copy of the original file with the original content intact.

In converting the deprecated features, Animate attempts to preserve the original content visually. However, after converting some of the functionality available with the original content may not be available:

1. Inverse Kinematics are converted to frame-by-frame animations
2. TLF text is converted to classic, static text. TLF text embedded within PSD or AI files are also converted to classic text when imported in Animate CC.
3. ActionScript 1 / ActionScript 2:
    1. Publish Settings is defaulted to ActionScript 3
    2. AS2 code attached to any instance on stage will be removed (because actions on instances is not supported in AS3)
    3. AS2 components will be carried forward as placeholders, but cannot be used to create new content on stage. Also, they will generate compile errors in AS3.

Note:

As Animate CC scans for and then convert any deprecated content in older files, you may experience delays when opening files previously saved in an earlier version of Animate. To resolve this delay for future uses, re-save the file using Animate CC. Once the file is stamped as CC, this scan and conversion will no longer occur on the said file and, hence, resulting in faster file opening times.

Note:

Animate CC does not support importing of SWC files.

Video

Chapter 5: Platforms

Custom Platform Support

Animate supports creating rich graphics and animations using document types such as ActionScript, HTML5, and WebGL. The Custom Platform Support feature helps to extend the power of Animate CC to support platforms that are not native to Animate.

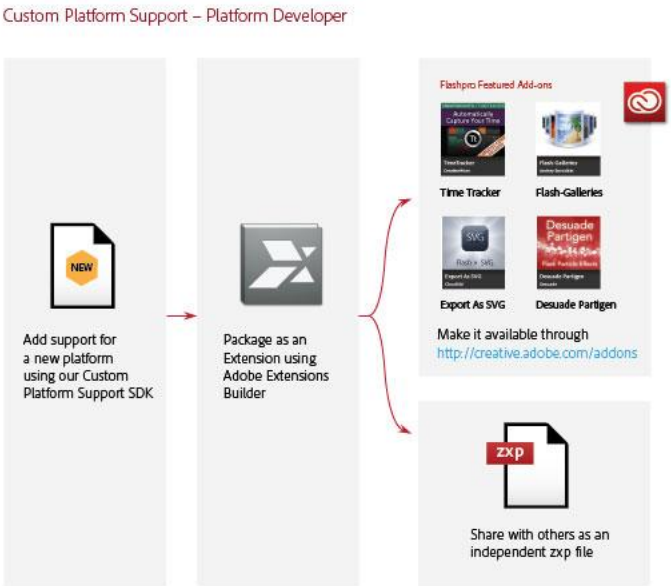
Custom Platform Support can be added to Animate by implementing a plugin using a set of Application Programming Interfaces (APIs) that are provided as part of the Custom Platform Support Development Kit. The developers can create custom platform support plugins for Animate using these interfaces and referring to the the sample code. By installing a platform support plugin for a new document type, users can create their art using the rich feature set of Animate and publish it in the output format of the custom platform.

Workflows

The Custom Platform Support feature includes two parts: one for the developer who creates custom platform support plugins and the other for the user who installs and uses the plugin.

Developer

If you are a developer who builds add-ons for Animate, you can use the following workflow to develop and distribute your plugins:


Custom Platform Support – Platform Developer
NEW
Add support for a new platform using our Custom Platform Support SDK
Package as an Extension using Adobe Extensions Builder
Flashpro Featured Add-ons
Time Tracker
Flash-Galleries
Export As SVG
Desuade Partigen
Make it available through http://creative.adobe.com/addons
zxp
Share with others as an independent zxp file

Note:

For instructions on how to develop Custom Platform Support plugins using the development kit, see Enabling Support for Custom Platforms.

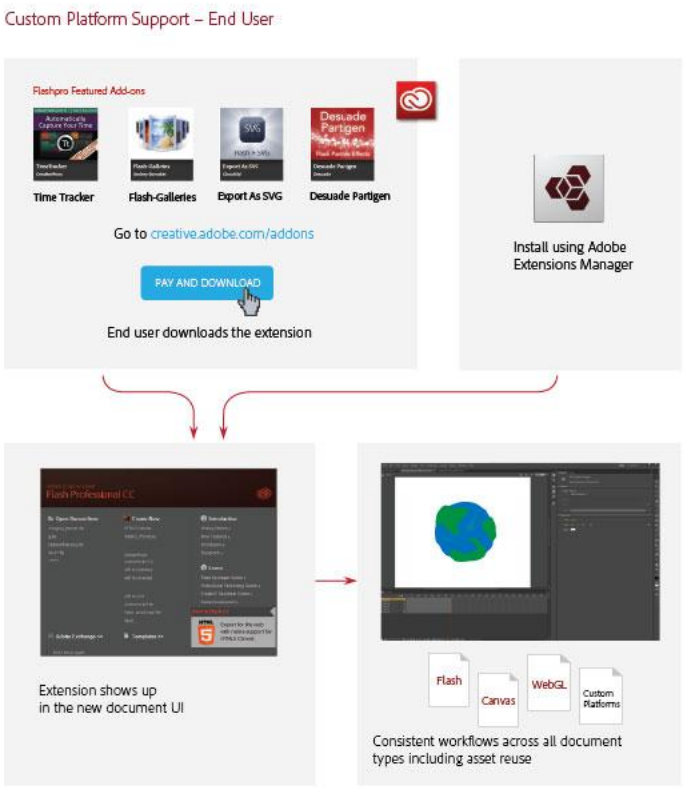
For detailed documentation of APIs in the development kit, see Custom Platform Support API Reference.

User

If you are a Animate user, you can acquire a Custom Platform Plugin using one of the following methods:

- Download the Custom Platform Support plugin for a platform of your choice from the Adobe Add-ons page. The Adobe Add-on page allows you to acquire a plugin and install it using the Adobe Creative Cloud application.
- Get a .zxp file from a plugin developer and install it using the Adobe Extension Manager application.

The following workflow illustrates how you can install a custom platform support plugin and create your custom platform document.



Create and publish HTML5 Canvas documents in Animate CC

What is HTML5 Canvas?

Canvas is a new element in HTML5, which provides APIs that allow you to dynamically generate and render graphics, charts, images, and animation. The presence of the Canvas API for HTML5, strengthens the HTML5 platform by providing two-dimensional drawing capabilities. These capabilities are supported on most modern operating systems and browsers.

Essentially, Canvas is a bitmap rendering engine, and the drawings are final and cannot be resized. Furthermore, objects drawn on Canvas are not part of the web page's DOM.

Within a web page, you can add Canvas elements using the <*Canvas*> tag. These elements can then be enhanced using JavaScript to build interactivity. For more information, see this link.

The new HTML5 Canvas document-type

Animate CC enables you to create an HTML5 Canvas document with rich artwork, graphics, animations, and so on. A new document type (HTML5 Canvas) has been added to Animate that provides native support for creating rich and interactive HTML5 content. It means that you can use the traditional Animate timeline, workspace, and tools to create content, but produce HTML5 output. With a few simple clicks, you are ready to create an HTML5 Canvas doc and generate a fully functional output. To its end, within Animate, the document and publish options are preset to generate HTML5 output.

Animate CC is integrated with CreateJS, which enables rich interactive content on open web technologies via HTML5. Animate CC generates HTML and JavaScript for content (includes bitmaps, vectors, shapes, sounds, tweens, and so on) created on stage. The output can be run on any device or browser that supports HTML5 Canvas.

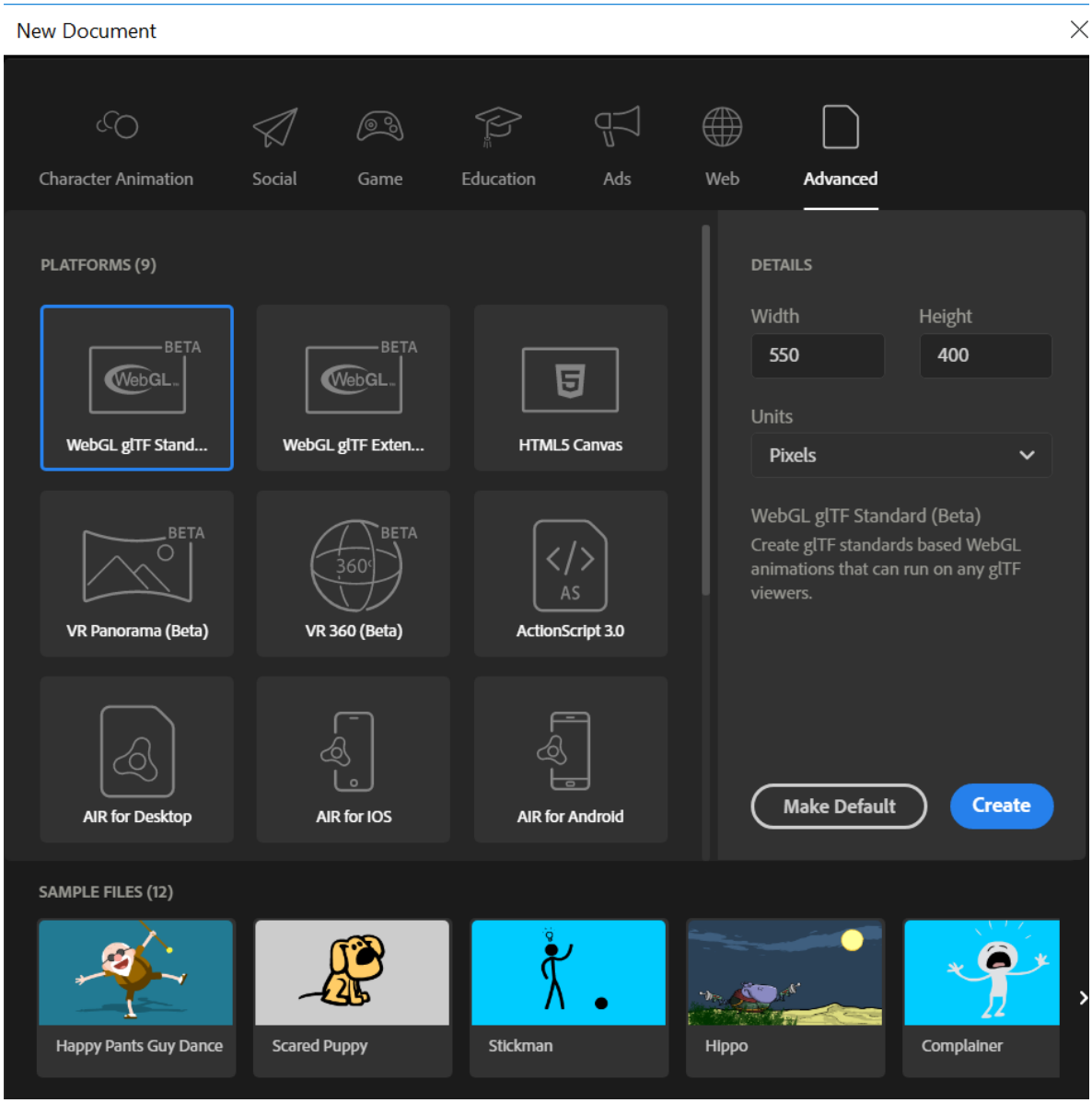
Animate and the Canvas API

Animate publishes to HTML5 by leveraging the Canvas API. Animate seamlessly translates objects created on stage in to their Canvas counterparts. By providing a 1-to-1 mapping of Animate features with the APIs within Canvas, Animate enables you to publish complex content to HTML5.

Creating an HTML5 Canvas document

To create an HTML5 Canvas document, do the following:

1. On the Animate CC Welcome screen, click the HTML5 Canvas option. This opens a new FLA with Publish Settings modified to produce HTML5 output.
2. Alternatively, select **File**> **New** to display the New Document dialog. Click the **HTML5 Canvas** option.



New Document

You can now begin creating HTML5 content using the tools within Animate. As you begin working with the HTML5 Canvas document, you notice that certain features and tools are not supported and are disabled. This is because, Animate supports those features that are in-turn supported by the Canvas element within HTML5. For example, 3D transformations, dotted lines, bevel effects are not supported.

Adding interactivity in HTML5 Canvas document

Animate CC publishes HTML5 content using the CreateJS libraries. CreateJS is a suite of modular libraries and tools which enable rich interactive content on open web technologies via HTML5. The CreateJS suite comprises of: EaselJS, TweenJS, SoundJS, and PreloadJS. CreateJS converts content created on stage to HTML5 using these individual libraries to produce HTML and JavaScript output files. You can also manipulate this JavaScript file to enhance your content.

However, Animate CC allows you to add interactivity to objects on stage created for HTML5 Canvas from within. It means that you can actually add JavaScript code to individual objects on stage from within Animate and preview at author-time. In turn, Animate provides native support for JavaScript with useful features within the code-editor to help improve workflow efficiency of programmers.

You can choose individual frames and keyframes on the Timeline to add interactivity to your content. For an HTML5 Canvas document, you can add interactivity using JavaScript. For more information about writing JavaScript code, see this link.

JavaScript code can be written directly in the Actions panel, and it supports the following features while writing the JavaScript code:

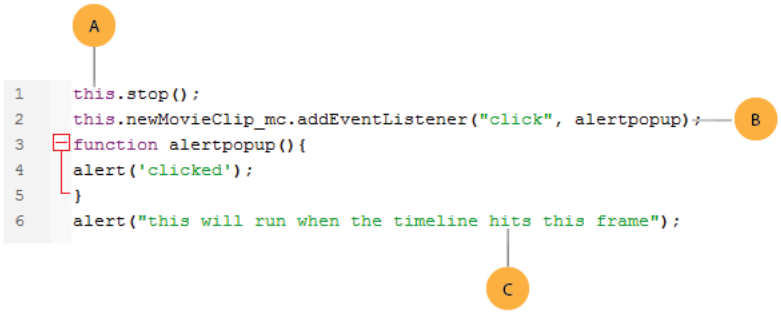
Code Hinting Allows you to quickly insert and edit JavaScript code and without mistakes. As you type characters in the Actions Panel, you can see a list of candidates that possibly complete your entry.

Additionally, Animate also supports some features inherent to Actions Panel when working with HTML5 Canvas. These features help improve workflow efficiency when adding interactivity to objects on stage. They are:

Syntax Highlighting Displays code in different fonts or colors according to the syntax. This feature allows you to write code in a structured manner, helping you visually distinguish correct code and syntax errors.

Code Coloring Displays code in different colors according to the syntax. This allows you to visually distinguish various parts of a syntax.

Bracket Automatically adds closing brackets and parentheses for open when writing JavaScript code.



(A) Syntax Highlighting (B) Code Coloring (C) Brackets

You can add interactivity to shapes or objects on stage using JavaScript. You can add JavaScript to individual frames and keyframes.

1 Select the frame you want to add JavaScript to.

2 Select **Window** > **Actions** to open the Actions Panel.

Using JavaScript Code Snippets

You can add interactivity using JavaScript code snippets available within Animate CC. To access and use Code Snippets, select **Windows** > **Code Snippets**. For more information about adding JavaScript code snippets, see Add interactivity with code snippets in Animate CC.

References to CreateJS documentation

CreateJS Library	API Documentation	Code Samples on Github
EaselJS	http://createjs.com/Docs/EaselJS/modules/EaselJS.html	https://github.com/createjs/easeljs/
TweenJS	http://createjs.com/Docs/TweenJS/modules/TweenJS.html	https://github.com/createjs/tweenjs/
SoundJS	http://createjs.com/Docs/SoundJS/modules/SoundJS.html	https://github.com/createjs/soundjs/
PreloadJS	http://createjs.com/Docs/PreloadJS/modules/PreloadJS.html	https://github.com/createjs/preloadjs/

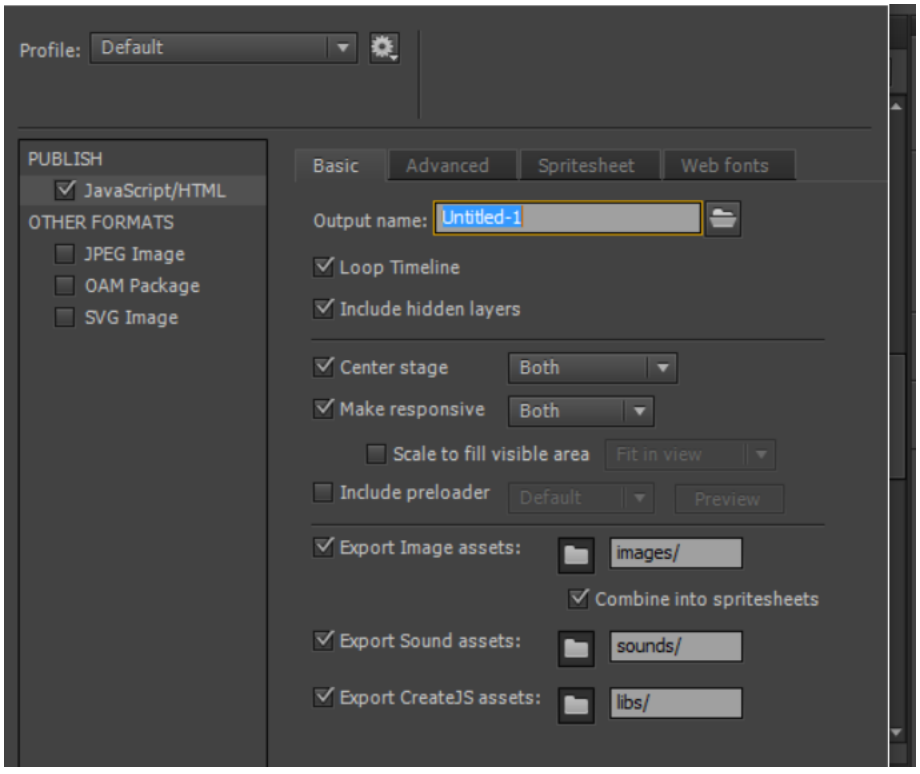
Publishing animations to HTML5

To publish the content on stage to HTML5, do the following:

1 Select **File** > **Publish Settings**.

2 In the Publish Settings dialog, specify the following settings:

Basic settings



Output The directory the FLA is published to. This defaults to the same directory as the FLA, but can be changed by clicking the browse button "...".

Loop Timeline If checked the timeline loops, if not it stops when it plays to the end.

Include Hidden Layers If deselected, hidden layers are not included in the output.

Center Stage Allows users to select if the stage should be centered **Horizontally, Vertically or Both**. The HTML canvas/stage is displayed at the center of the browser window by default.

Make Responsive Allows users to select if the animation should be responsive with reference to Width, Height, or both and resizes the published output based on various form factors. The result is a responsive, sharper and a crisper HiDPI compliant output.

The output also stretches to cover the entire screen area with no borders, and yet maintains the original aspect ratio, though some part of the canvas may not fit in view.

- **Width, Height or Both** options ensures that the entire content is scaled down to the canvas size and is visible even when you view on a small screen (such as mobile devices or tablets). If the screen size is larger than the authored stage size, canvas is displayed in the original size.

Enable Scale to Fill Visible Area Allows users to select if the animation should fit to view the output in full screen mode or should stretch to fit. By default, this option is disabled.

Fit in view: Displays the output in Full screen mode with the entire screen space and yet maintains the aspect ratio.

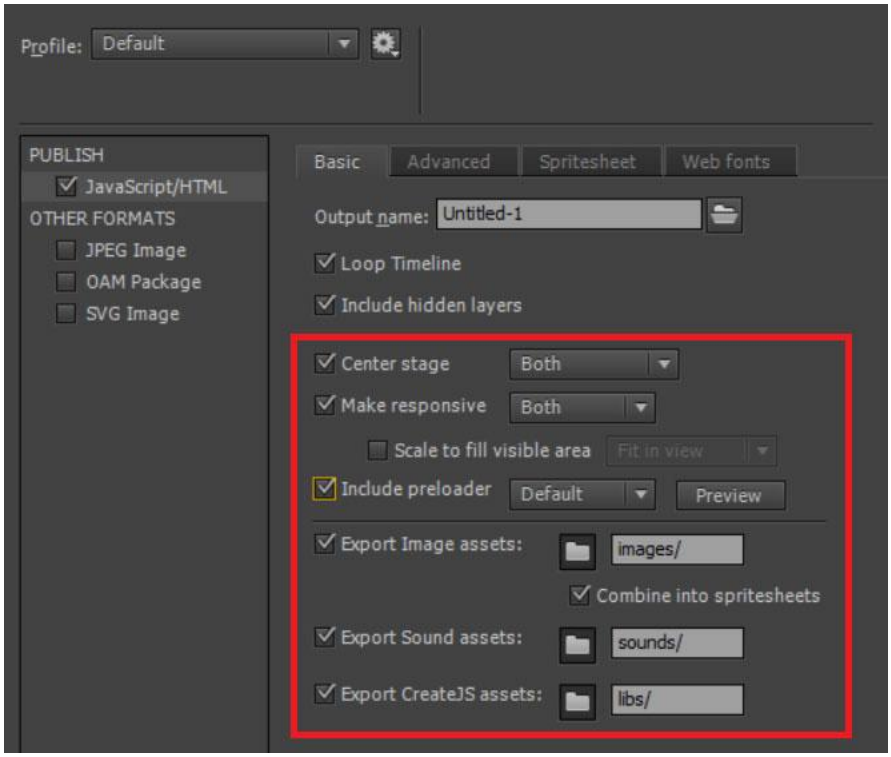
Stretch to fit: Stretches such that there are no border spaces in the output.

Include Preloader: Allows users to select if they want the default Preloader or select a Preloader of their choice from the document library.

Preloader is a visual indicator in the form of an animated GIF that is displayed when the scripts and assets required to render an animation is loading. Once the assets are loaded, the preloader is hidden and the actual animation is displayed.

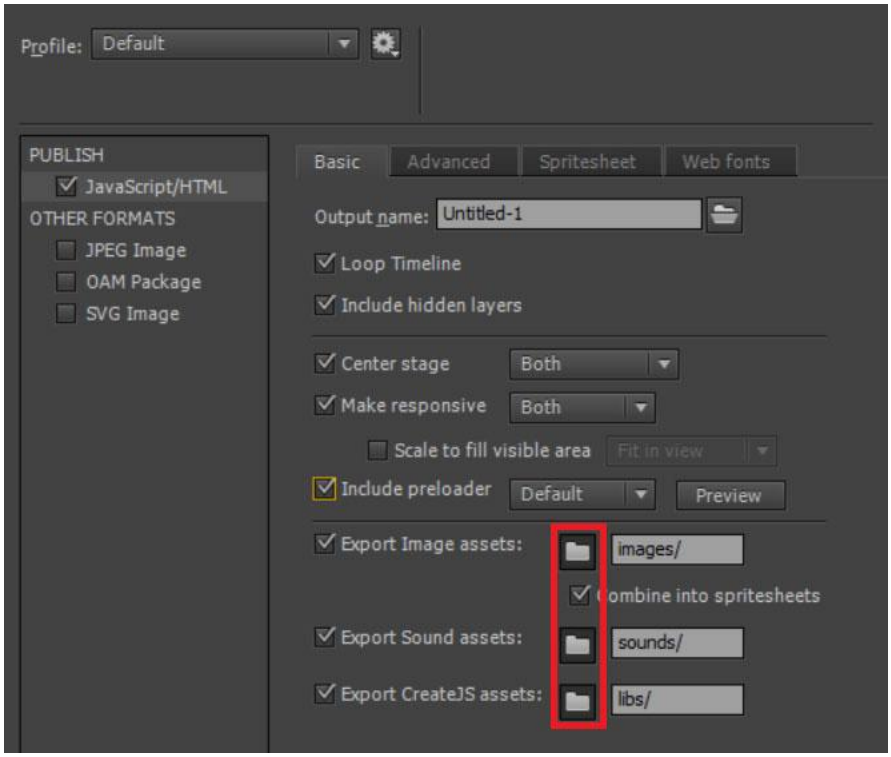
By default, the Preloader option is not selected.

- **Default** option to use the default preloader or the
- **Browse** option to use the preloader GIF of your choice. The preloader GIF is copied to the configured images folder in the **Export Image assets.**
- Use the **Preview** option to preview the selected GIF.



Publish settings

Use the toggle options to opt for publishing at the root or the sub-folder level. This button is toggled **ON** by default. Toggling OFF disables the folder field and exports assets to the same folder as the output file.



Publish canvas assets to root folder

Export image assets The folder in which images assets are placed into and referenced from.

Combine into spritesheets: Select this to combine all the image assets into a spritesheet. For more spritesheet options, see Export bitmaps as spritesheets

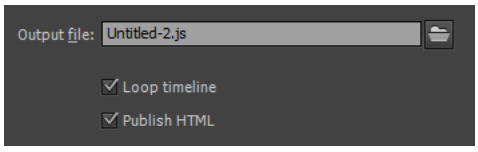
Export Sound assets The folder in which the sound assets in your document are placed into and referenced from.

Export CreateJS assets The folder in which the CreateJS libraries are placed into and referenced from.

Note:

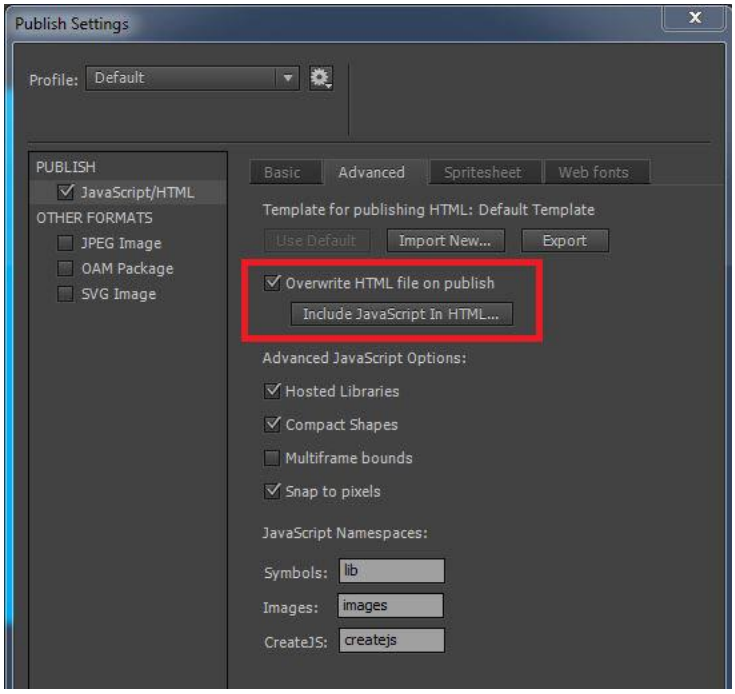
The default setting continues to publish files segregated into logical sub folders.

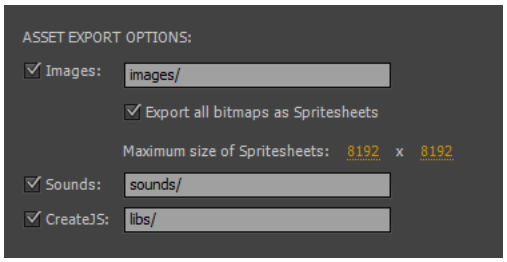
Advanced settings

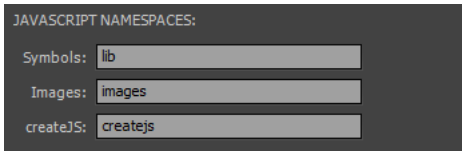


Asset Export Options The relative URLs to export images, sounds, and supporting CreateJS JavaScript libraries to. If the check box to the right is not checked, those assets are not exported from the FLA, but the specified path is still used to assemble their URLs. It expedites publishing from an FLA with many media assets, or avoid overwriting modified JavaScript libraries.

The **Export all bitmaps as Spritesheets** option allows you to pack all the bitmaps in canvas document in to a sprite sheet, which reduces the number of server requests and improves performance. You can specify the maximum size of the sprite sheet by giving the height and width values.







Template for publishing HTML:

Use Default: Publish your HTML5 output using the default template.

Import New: Import a new template for your HTML5 document.

Export: Export your HTML5 document as a template.

Hosted Libraries: If checked, it uses copies of the libraries hosted on the CreateJS CDN at code.createjs.com. It allows the libraries to be cached and shared between various sites.

Include Hidden Layers: If deselected, hidden layers are not included in the output.

Compact Shapes: If checked, vector instructions are outputted in a compact form. Deselect to export readable, verbose instructions (useful for learning purposes).

Multiframe bounds: If checked, timeline symbols include a frameBounds property containing an array of Rectangles corresponding to the bounds of each frame in the timeline. Multiframe bounds significantly increases publish time.

Overwrite HTML file on publish and include JavaScript In HTML: If include JavaScript In HTML is selected, the Overwrite HTML file on Publish check box is checked and disabled. If you uncheck the Overwrite HTML file on Publish check box, then include JavaScript in HTML is unchecked and disabled.

? Click Publish to publish your content to the specified location.

Note:

An animation designed using nested timelines, with a single frame, cannot be looped.

HTML template variables

When you import a new custom HTML template, during publishing, the default variables are replaced with customized code snippets based on the components of your FLA file.

The following table lists the current template variables that Animate recognizes and replaces:

Attribute Parameter	Template Variable
Title of the HTML document	$TITLE
Placeholder for including CreateJS scripts	$CREATEJS_LIBRARY_SCRIPTS
Placeholder for including generated scripts (including web font scripts)	$ANIMATE_CC_SCRIPTS
HTML Tag to start a client-side script	$SCRIPT_START
Placeholder for code to create loader (CreateJS LoadQueue)	$CREATE_LOADER
Placeholder for code to load assets present in the manifest	$LOAD_MANIFEST
Placeholder for code defining the method to load files	$HANDLE_FILE_LOAD_START
Placeholder for code to handle file load event	$HANDLE_FILE_LOAD_BODY
Placeholder for code concluding the method to load files	$HANDLE_FILE_LOAD_END
Placeholder for code defining the method handle Complete, called after assets are loaded	$HANDLE_COMPLETE_START
Placeholder for code to create the stage	$CREATE_STAGE
Placeholder for code to register for tick event, after which animation starts	$START_ANIMATION
Placeholder for code to support responsive scaling and hidpi displays	$RESP_HIDPI
Placeholder for code concluding the method handle Complete	$HANDLE_COMPLETE_END
Placeholder for a function to handle content with sounds	$PLAYSOUND

Placeholder for styling section to support centering the canvas	$CENTER_STYLE
Placeholder for canvas display style property to support Preloader	$CANVAS_DISP
Placeholder for code to display Preloader	$PRELOADER_DIV
HTML Tag for end of client-side script	$SCRIPT_END
Canvas element ID	$CANVAS_ID
Width of the stage or canvas element	$WT
Height of the stage or canvas element	$HT
Background color of the stage or canvas element	$BG
Version of Animate CC used to generate content	$VERSION

Following tokens from the previous versions are deprecated in the current version:

Attribute Parameter	**Template Variable**
Placeholder to include scripts (CreateJS and generated Javascript)	$CREATEJS_SCRIPTS
Placeholder for code to initialize CreateJS libraries, load media, create and update stage	$CJS_INIT*

Note:

These tokens are modularized and replaced by other tokens.

JSAPI support to import and export HTML templates for Canvas documents

Following JSAPIs support import and export of HTML templates for canvas documents:

- Exports the HTML5 Canvas Publishing Template for given document,at the specified location:

bool document::exportCanvasPublishTemplate(pathURI)

- Example:

var pathURI ="file:///C|/Users/username/desktop/CanvasTemplate.html"

var exportFlag =fl.getDocumentDOM().exportCanvasPublishTemplate(pathURI);

if(!exportFlag)

fl.trace("Template could not be exported");

- Imports and sets the HTML5 Canvas Publishing Template for given document, from the specified location pathURI:

bool document::importCanvasPublishTemplate(pathURI)

- Example:

var pathURI= "file:///C|/Users/username/desktop/CanvasTemplate.html";

var exportFlag =fl.getDocumentDOM().importCanvasPublishTemplate(pathURI);

if(!exportFlag)

fl.trace("Template could not be imported");

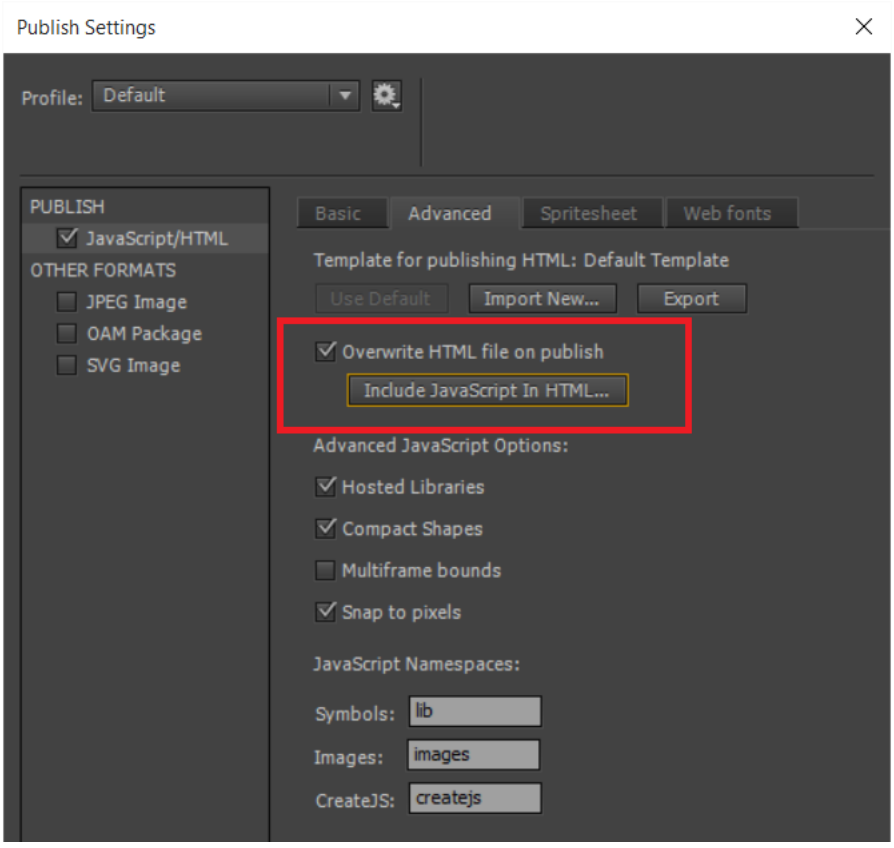
Embed JavaScript into HTML

Animate introduces the capability to include JS file within the HTML file during canvas publishing.

1. In the **Publish Settings** menu, switch to **Advanced** tab and select **Include JavaScript In HTML**.
2. Select **OK** in the **Include JavaScript in HTML on Publish** dialog box to republish the content overwriting HTML.
3. This disables the **Overwrite HTML file on Publish** check box, and during any publishing event, HTML is generated, but overwritten.
4. In the **Select Stop including JavaScript in HTML,** select **OK** to exclude the JavaScript and republish the HTML file.
5. When the **Overwrite HTML file on Publish** is not selected, the **Include JavaScript In HTML** option is automatically disabled.

Note:

If you do not want the HTML to be overwritten, the options ***Overwrite HTML file on Publish*** *and* ***Embed JS in HTML option*** *cannot coexist.*



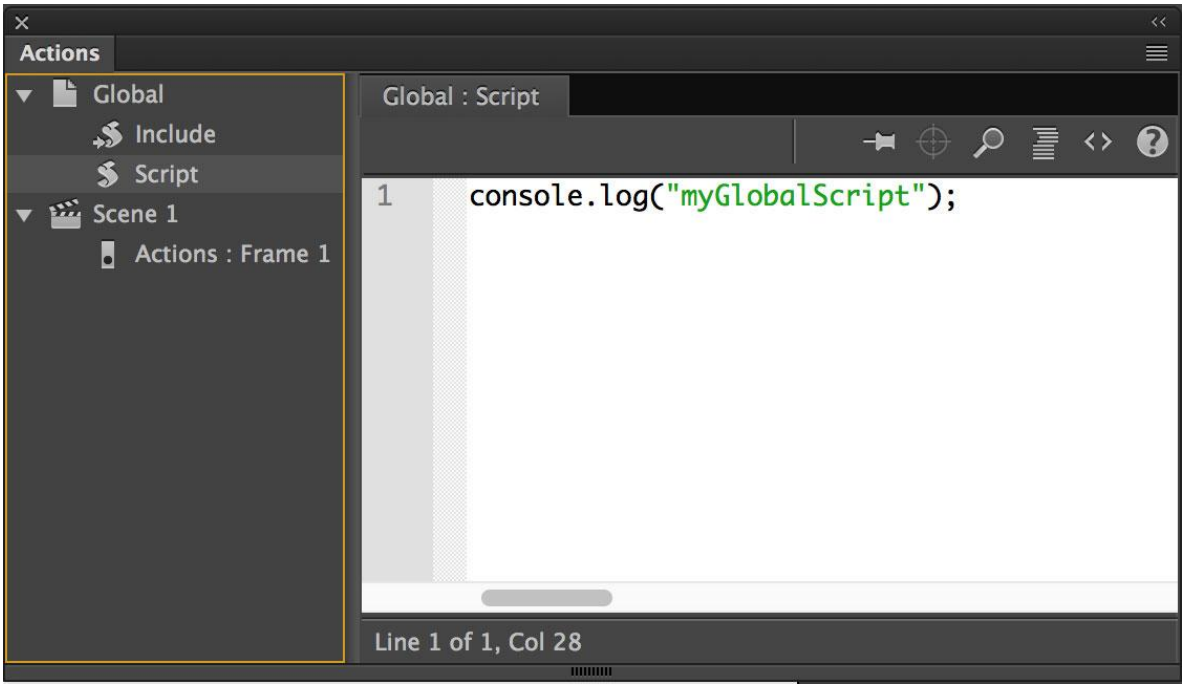
Merging Js with HTML

Adding Global and Third-party scripts

Animators often utilize JavaScript code that is applicable to the entire animation. With this feature, you can add non-frame specific global and third-party scripts that can be applied to the whole animation from within Animate.

To add and use global scripts:

1 Select **W**indow > **A**ctions



2 In the Actions panel, select **S**cript within the Global hierarchy.

The Global Script section allows you to write scripts applicable across documents either within Animate or as an external script.

As an external script: In the **I**nclude screen, select the specific script for inclusion as described in the next section.

Adding third-party scripts

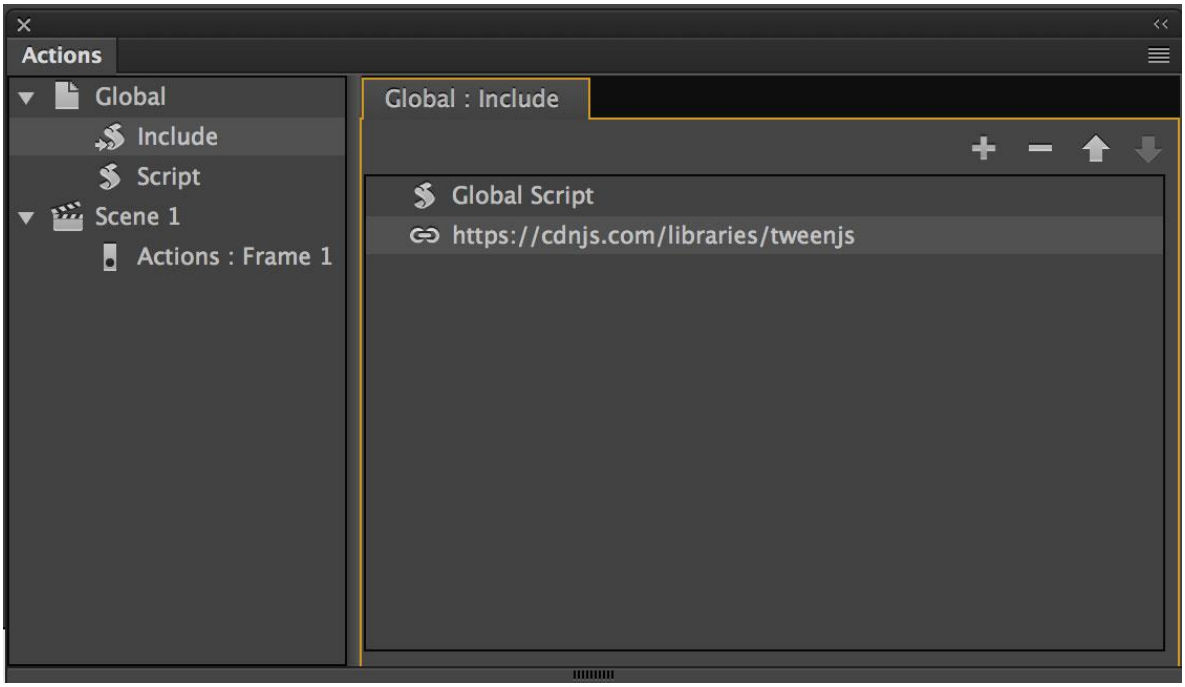
Animators often incorporate third-party JavaScript libraries but have to manually modify the code that Animate CC generates. With this feature, animators have greater flexibility to utilize the latest JavaScript libraries or code for animation.

To add third-party scripts:

1 Select **W**indow > **A**ctions.

2 In the Actions panel, select **I**nclude within the Global hierarchy.

3 Click the + button to add a script from an externally hosted URL or add a file by browsing to a local library.



You can also reorder the scripts based on their inter-dependencies, as some objects are dependent on other pre-existing libraries.

Merging JSON data into JS

Based on customer feedback and JSON files being inherently insecure, we have merged the relevant data with the JS file and hence a separate JSON file is not created.

Optimizing HTML5 Canvas output

Animate optimizes HTML5 Canvas output size and performance by:

- Exporting bitmaps as sprite sheet using the options in the Spritesheet tab in Publish Settings.
- Excluding hidden layers (by deselecting the Include hidden layers check box) from published output.
- Excluding all unused assets such as sounds and bitmaps, and all assets on unused frames (default).
- Specifying not to export the assets from the FLA by deselecting the asset export options for images, sounds, and supporting CreateJS JavaScript libraries and using the relative URLs to export.
- HiDPI compatible HTML5 Canvas output: Animate scales the output based on the pixel ratio of the device on which you view the content. This compatibility delivers a sharper output with zoom and also fixes the pixelation issues for canvas documents when you view the HTML canvas output on a High DPI machine.

Setting a transparent canvas background

You can customize the canvas to various colors and also modify its display transparency. When you create a transparent canvas, you can view the underlying HTML content during publishing.

Note: This setting also makes the background transparent during OAM publishing.

1 Select the canvas you wish to modify.

2 In the **Properties** pane, select **Stage**.

3 In Stage, set the percentage values for **Alpha.**

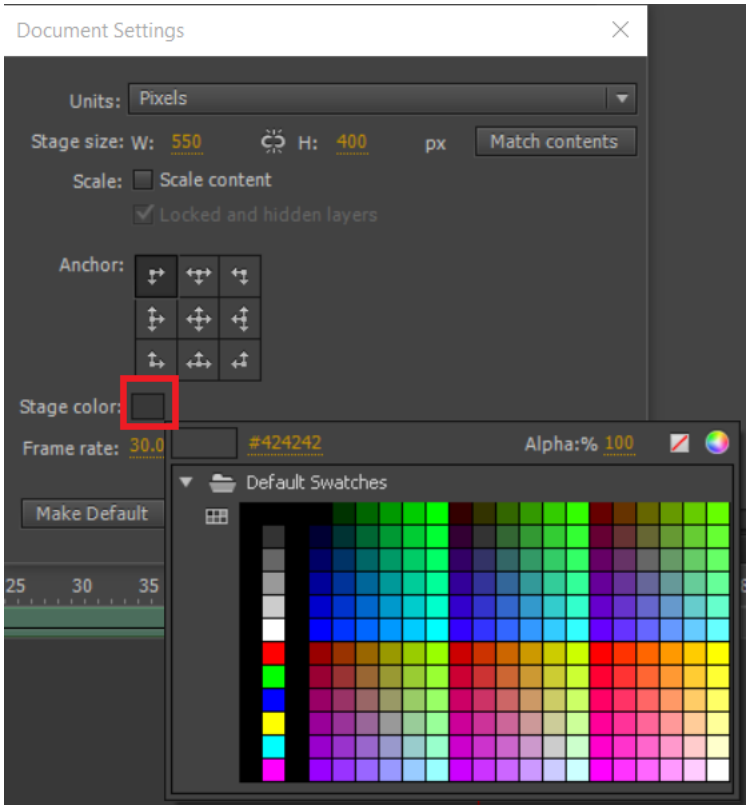
"No color" swatch support

You can also use the No Color Swatch option to make the canvas background as transparent:

1 Select **Modify>Document>Stage Color** or in the **Property Inspector**, select **Advanced Settings**.

2 In the **Stage Color** swatch, select **No Color.**

Canvas transparency

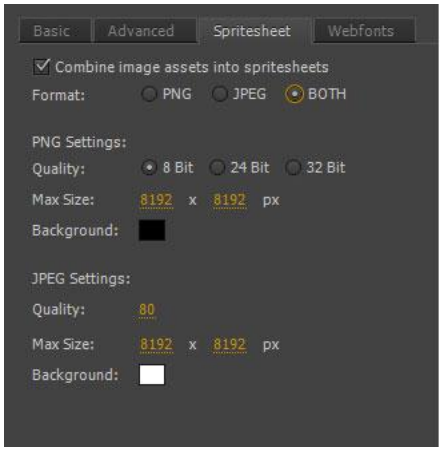


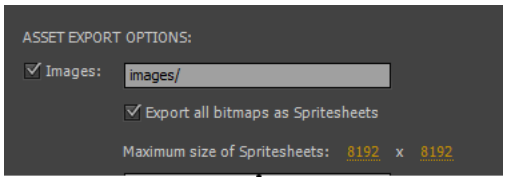
Canvas Transperancy: Advanced Settings

Export bitmaps as sprite sheet

Exporting a number of bitmaps that you have used in your HTML5 Canvas document as a single sprite sheet reduces the number of server requests, reduces the output size, and improves performance. You can export spritesheet either as PNG (default), JPEG, or both.

1. In the **Spritesheet** tab, select the **Combine image and assets into spritesheets** check box.
2. Select the **Format** as **PNG**, **JPEG**, or **Both**.
3. If you have selected **PNG** or **Both**, specify the following options under **PNG Settings**:
   - **Quality**: set the spritesheet quality as 8-Bit (default), 24-Bit, or 32-Bit.
   - **Max Size**: specify the maximum height and width of the sprite sheet in pixels.
   - **Background**: click and set the background color for the spritesheet.
4. If you have selected **JPEG** or **Both**, specify the following options under **JPEG Settings**:
   - **Quality**: set the spritesheet quality.
   - **Max Size**: specify the maximum height and width of the sprite sheet in pixels.
   - **Background**: click and set the background color for the spritesheet.





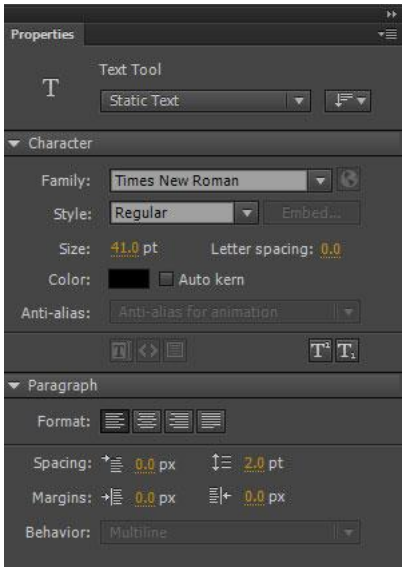
Working with text in HTML5 Canvas document

HTML canvas supports Static and Dynamic text.

Static Text

Static text is a richer option where all the assets are converted to outlines during publish time and provides excellent WSYWIG user experience. Since the text is published as vector outlines, you cannot edit them at runtime.

Note: Too much of static text usage may lead to bloated file size.



Dynamic text

Dynamic text allows modification of text at runtime and does not add too much to the file size. It supports lesser options than Static text. It also supports web fonts via Typekit.

If you are using dynamic text with fonts unavailable on end user machines, the output uses the default font for display and thus skews user experience. Such issues are resolved through web fonts.

Add TypeKit web fonts to your HTML5 Canvas document

Animate CC offers Typekit Web fonts for Dynamic Text type in HTML5 Canvas document. Typekit provides direct access to thousands of quality, premium fonts from top foundry partners. You can access and use Typekit fonts seamlessly in your HTML5 output for modern browsers and mobile devices, using your Creative Cloud membership.

To know more about using Typekit fonts in Animate CC, see Using Typekit Webfonts in HTML5 Canvas documents

Animate release 2015.2 enhances the visual experience for dynamic text in a canvas document so that the stage and published appearances are in sync.

Note: Typekit web fonts are not available for Static text type.

Video

Understanding the HTML5 Canvas output

The published HTML5 output contains the following files:

HTML file Contains definitions for all shapes, objects, and artwork within the Canvas element. It also invokes the CreateJS namespace to convert Animate to HTML5 and the corresponding JavaScript file that contains interactive elements.

JavaScript file Contains dedicated definitions and code for all interactive elements of the animation. Also defined within the JavaScript file are, code for all types of tweens.

These files are copied to the same location as that of the FLA by default. You can change the location by providing the output path on the Publish Settings dialog (File > Publish Settings).

Migrating existing content to HTML5 Canvas

You can migrate existing content within Animate to generate an HTML5 output. To its end, Animate allows you to migrate content by manually copying or importing individual layers, symbols, and other library items. Alternatively, you could run the Convert AS3 to HTML5 Canvas document command to automatically port existing ActionScript content to a new HTML5 Canvas document. For more information, see this link.

However, when working the HTML5 document type in Animate CC, you can notice that certain Animate features are not supported. This is because, the features within Animate do not have corresponding features within the Canvas API. And hence, these features cannot be used within the HTML5 Canvas document type. This may affect you during content migration, when you attempt to:

Copy content (layers or library symbols) from a traditional Animate document type (such as ActionScript 3.0, AIR for Android, AIR for Desktop, and so on) into an HTML5 document. In this case, an unsupported content-type is either removed or converted to supported defaults.

For example, copying 3D animation will remove all 3D transformations applied to objects on stage.

Import a PSD or AI file that contain unsupported content. In this case, the content is either removed or converted to supported defaults.

For example, import a PSD file that has Gradient Bevel effect applied. Animate removes the effect.

Work with multiple document types (for example, ActionScript 3.0 and HTML5 Canvas) simultaneously, you switch documents with an unsupported tool or option selected. In this case, Animate CC visually indicates that the feature is not supported.

For example, you created a dotted line in an ActionScript 3.0 document and switch to HTML5 Canvas with the Line tool still selected. Observe the pointer and the Properties Inspector, they display icons to indicate that dotted line is not supported within HTML5 Canvas.

Scripts ActionScript components are removed and the code is commented out. And also, if you have JavaScript written within the comment block (for Toolkit for CreateJS with Animate CC 13.0), ensure that you manually uncomment the code.

For example, if you copied layers that contain buttons, they are removed.

Changes applied to content after migrating

The following are the types of changes that are applied when you migrate legacy content to an HTML5 Canvas document.

Content is removed Content types that are not supported in HTML5 Canvas are removed. For example:

- 3D Transformations are removed
- ActionScript code is commented out
- Videos are removed

Content is modified to a supported default value Content type or feature is supported, but a property of the feature is not. For example:

- Overlay Blendmode is not supported; is modified to Normal.
- Dotted Line is not supported; is modified to Solid.

For a full list of features that are not supported and their fallback values during migration, see this article.

Converting other document types to HTML5 Canvas documents

The universal document type converter enables conversion of your existing FLA projects (of any type) to any other document type such as HTML5 Canvas, ActionScript/AIR, WebGL, or a custom document type. When you convert to a format, you can take advantage of the authoring features that Animate offers for that document type.

For more information, see Convert to other document formats

Converting ActionScript 3 to HTML5 Canvas document using JSFL script

Animate CC provides a JSFL script to convert an AS3 document to HTML5 Canvas document. When run, the JSFL script does the following:

- Creates a new HTML5 Canvas document.
- Copies all layers, symbols, and library items to the new HTML5 Canvas document.
- Applies defaults to unsupported features, subfeatures, or feature-properties.
- Creates separate FLA files for each scene, because HTML5 Canvas document does not support multiple scenes.

To convert an AS3 document to HTML5 Canvas document, do the following:

1. Open the ActionScript 3 document in Animate CC.
2. Select **Commands** > **Convert AS3 to HTML5 Canvas document**.

Creating and publishing a WebGL document

Note:

Support for WebGL is only available as preview. This update of Animate includes support for basic animations with sound and scripting, and a set of interactivity features. With future releases of Animate, you will see more features being enabled for the WebGL document type. For a complete list of Animate features that are supported for WebGL, see this KB article.

What is WebGL?

WebGL is an open web standard for rendering graphics on any compatible browser, without the need for additional plug-ins. WebGL is integrated completely into all the web standards of the browser allowing GPU accelerated usage of image processing and effects as part of the web page canvas. WebGL elements can be embedded with other HTML elements and composited with other parts of the page.

Although, most modern-day browsers support WebGL, visit this link to know more details about the exact versions that are supported.

Some browsers do not have WebGL enabled by default. To enable WebGL on your browser, see this article.

Note:

Ensure that you enable WebGL on your browser, because some browsers disable WebGL by default.

The WebGL document type

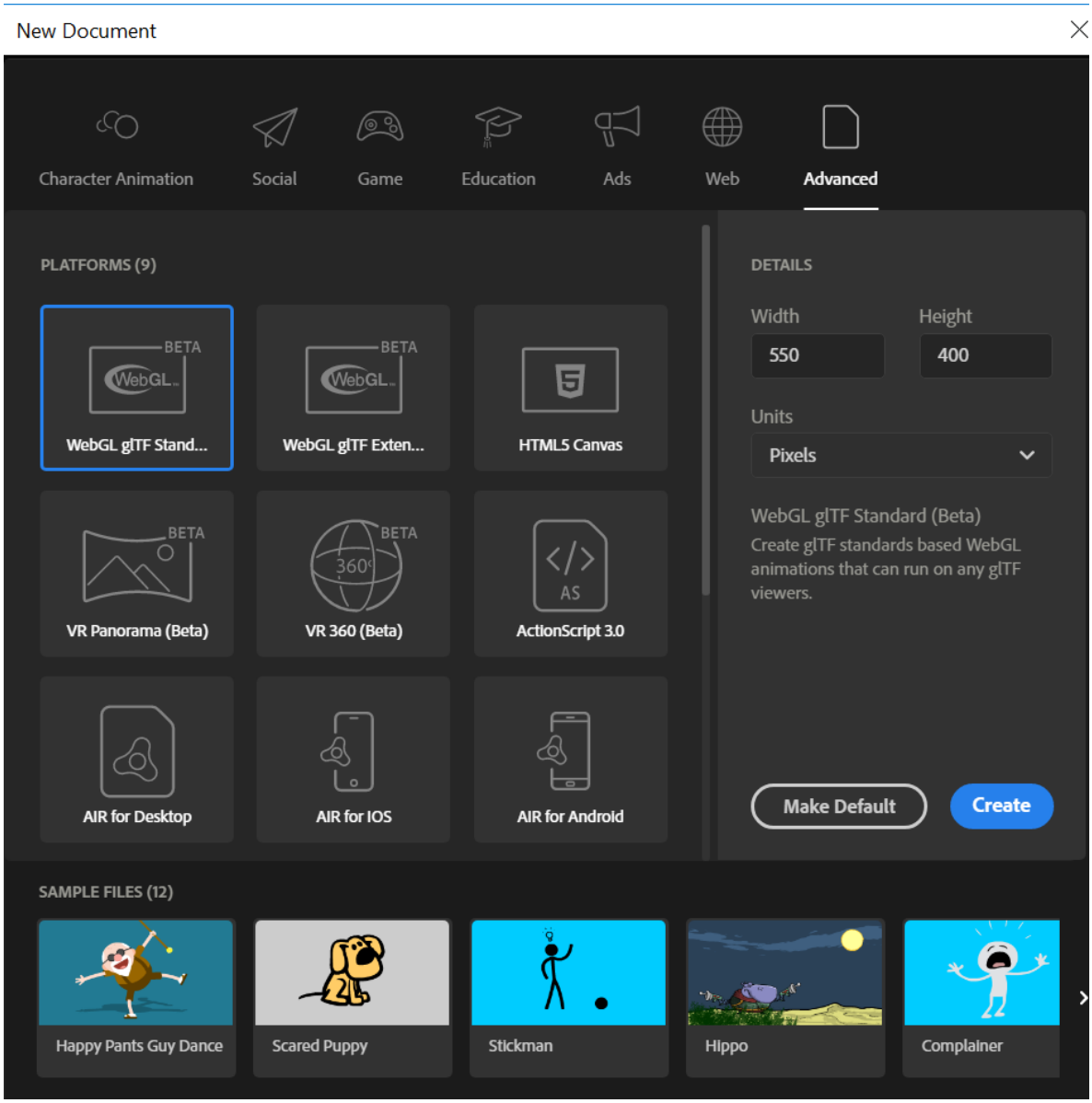
Animate CC allows you to create and publish rich interactive content to the Web Graphics Library (WebGL) format. Since WebGL is fully integrated into browsers, it allows Animate to leverage GPU accelerated usage of graphics processing and rendering, as part of the web page canvas.

In Animate CC, a new document type has been added for WebGL. This allows you to create content and quickly publish to a WebGL output. You can leverage powerful tools within Animate to create rich content, but render WebGL output that runs on any compatible browser. This means that you can use the traditional Animate timeline, workspace, and drawing tools to natively author and produce WebGL content. Most commonly used browsers support WebGL, there by, allowing Animate to render content on most web platforms.

Creating a WebGL document

In Animate CC, the WebGL document allows you to quickly create and publish content for the WebGL format. To create a WebGL document:

1. Launch Animate CC.
2. On the Welcome Screen, click the **WebGL(Preview)** option. Alternatively, select **File** > **New** menu option to display the **New Document** dialog. Click the **WebGL(Preview)** option.



New Document

Previewing WebGL content on browsers

You can use the Test Movie feature of Animate to preview or test your content. To preview, do the following:

? Within Animate CC, press Ctrl+Enter on Windows and CMD+Enter on MAC. This launches your default browser and renders the WebGL content.

Animate CC requires a web server to run WebGL content. Animate CC has a built-in Web Server that is configured to run WebGL content on Port #8090. If a server is already using this port, Animate automatically detects and resolves the conflict.

Publishing content to the WebGL format

Animate allows you to create and publish WebGL content natively from within.

To publish your WebGL document, do the following:

1 Select **File**> **Publish Settings** to display the Publish Settings dialog. Alternatively, select **File** > **Publish**. if you have already specified Publish Settings for WebGL.

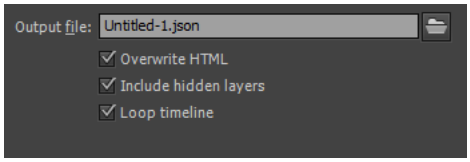
2 On the Publish Settings dialog, specify values for:

Output file Provide a meaningful name for the output. Also, browse to or enter the location where you want to publish the WebGL output.

Overwrite HTML Lets you specify whether to overwrite the HTML Wrapper or not everytime you publish your WebGL project. You may uncheck this option if you have made any external changes to the published HTML file and wish to retain them while updating any changes made to the animation or assets in Animate CC.

Include Hidden Layers Includes all hidden layers in the WebGL output. Deselecting Include Hidden Layers prevents all layers (including layers nested inside movie clips) marked as hidden from being exported in the resulting WebGL. This lets you easily test different versions of WebGL document by making layers invisible.

Loop Timeline Repeats the content when it reaches the last frame. Deselect this option to stop the content when it reaches the last frame.



? Click Publish to publish WebGL content to the specified location.

Note:

The maximum FPS that could specified for WebGL content that run on browsers is 60FPS.

Understanding the WebGL output

The published WebGL output contains the following files:

HTML Wrapper file It includes the runtime, calls for assets, and also, initializes the WebGL renderer. The file is named as <FLA_name>.html by default. You can provide a different name for the HTML file in the Publish Settings dialog (File > Publish Settings).

The HTML file is placed in the same directory as that of the FLA by default. You can provide a different location on the Publish Settings dialog.

JavaScript File (WebGL Runtime) Renders published content on WebGL. Is published in the libs/ folder of the WebGL document. The file is named as: *flwebgl-<version>.min.js*

The HTML wrapper makes use of this JS file to render WebGL content.

Texture Atlas Stores all the color value (of shapes) including the bitmap instances on the stage.

Adding audio to your WebGL document

You can import and embed audio to the your WebGL document, control the playback using the sync settings (event, start, and stop), and play timeline audio at runtime. WebGL currently supports only .wav and .mp3 formats.

For more information on working with audio, see How to use sound in Adobe Animate.

Migrating existing content to a WebGL document

You can migrate existing content within Animate to a WebGL document. To its end, Animate allows you to migrate via copying or importing content manually. Also, when working with multiple documents within Animate, it is a common practice to copy content across documents as Layers or assets in the Library. Although, most features of Animate are supported, some content types are modified to better accommodate the WebGL format.

Animate contains several powerful features that help produce visually rich content. However, considering that some of these features are native to Animate, they will not be supported in a WebGL document. Animate has been designed to modify such content to a supported format, and visually indicate when a tool or feature is not supported.

Copy content (layers or library symbols) from a traditional Animate document type (such as ActionScript 3.0, AIR for Android, AIR for Desktop, and so on) into a WebGL document. In this case, an unsupported content-type is either removed or converted to supported defaults.

For example, copying 3D animation will remove all 3D transformations applied to objects on stage.

Import a PSD or AI file that contain unsupported content. In this case, the content is either removed or converted to supported defaults.

For example, import a PSD file that has Blur effects applied. Animate removes the effect.

Work with multiple document types (for example, ActionScript 3.0 and WebGL) simultaneously, you switch documents with an unsupported tool or option selected. In this case, Animate CC visually indicates that the feature is not supported.

For example, you created a dotted line in an ActionScript 3.0 document and switch to WebGL with the Line tool still selected. Observe the pointer and the Properties Inspector, they visually indicate that dotted line is not supported within WebGL.

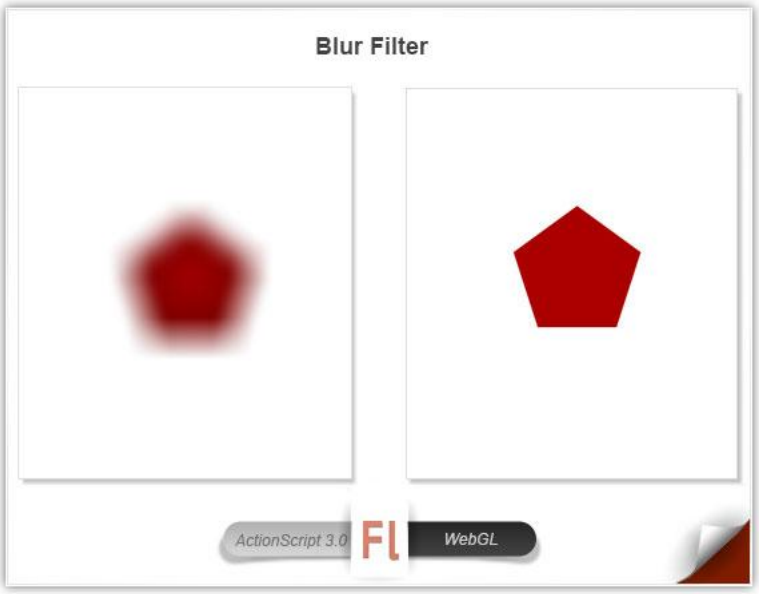
Scripts You can write Javascript code in the Actions panel, which will be executed after player enters the frame. The 'this' variable in the context of frame scripts refers to the instance of the MovieClip it belongs to. In addition, frame scripts can access Javascript functions and variables declared in the container HTML file. When you copy a frame or layer from an ActionScript document and paste it in a WebGL document, scripts if any will be commented.

Changes applied to content after migrating

The following are the types of changes that are applied when you migrate legacy content to an WebGL document.

Content is removed Content types that are not supported in HTML5 Canvas are removed. For example:

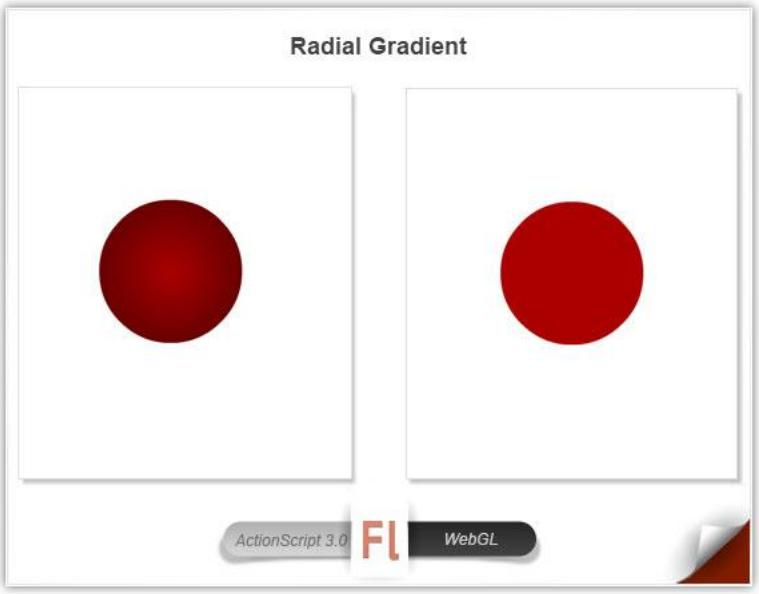
Filters are not supported. The effect will be removed, and the shape will assume a solid fill, instead.



Blur Filter effect is removed, and is replaced by Solid fill.

Content is modified to a supported default value Content type or feature is supported, but a property of the feature is not. For example:

Radial Gradient is modified to assume Solid fill using the primary color.



Radial Gradient is modified to Solid fill using the primary color.

For a full list of features that are not supported and their fallback values during migration, see this article.

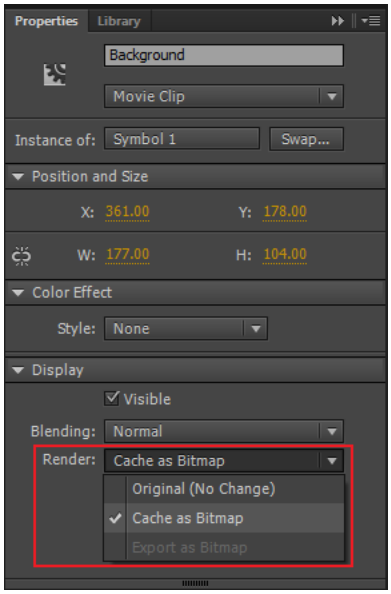
Improving rendering performance with bitmap caching

Runtime bitmap caching lets you optimize rendering performance by specifying that a static movie clip (for example, a background image) or button symbol be cached as a bitmap at runtime. By default, vector items are redrawn in every frame. Caching a movie clip or button symbol as a bitmap prevents the browser from having to continually redraw the item, because the image is a bitmap and its position does not change. This provides a significant improvement in performance of rendering WebGL content.

For example, when you create an animation with a complex background, create a movie clip containing all the items included in the background. Then select Cache as Bitmap for the background movie clip in the Property inspector. During playback, the background is rendered as a bitmap stored at the current screen depth. Browser draws the bitmap on the Stage quickly and only once, letting the animation play faster and more smoothly.

Bitmap caching lets you use a movie clip and freeze it in place automatically. If a region changes, vector data updates the bitmap cache. This process minimizes the number of redraws that browser must perform, and provides smoother, faster rendering performance.

To enable **Cache as Bitmap** property for a movieclip symbol, select the movieclip instance, and select Cache as Bitmap from the Render drop-down on Properties Inspector (**Window** > **Properties**).



Considerations when using Cache as Bitmap

When using Cache as Bitmap property on WebGL content, consider the following:

- Maximum size of the movieclip symbol is limited to 2048x2048. Note that the actual bounds of the movie clip instance that can be cached are lesser than 2048x2048, WebGL reserves some pixels.
- If there is more than one instance of the same movieclip, Animate generates the cache with the size of the first instance encountered. However, the cache is not re-generated and Cache as Bitmap property is not ignored, even if the transform of the movie clip changes to a large extent. And hence, if the movieclip symbol is greatly scaled during the course of animation, the animation may appear pixelated.

How to package applications for AIR for iOS

Animate CC includes support for publishing applications for AIR for iOS. AIR for iOS applications can run on the Apple iPhone and iPad. When you publish for iOS, Animate converts your FLA files into native iPhone applications.

For information about hardware and software requirements for desktop and mobile AIR applications, see AIR system requirements.

For detailed instructions about packaging applications for the iPhone, see Building Adobe AIR Applications with the Packager for iPhone.

Note:

Animate allows you to add path to the iOS SDK only when the AIR application includes an ANE file. Go to File > ActionScript Settings > Library Path to include an ANE file.

Support for AIR 17.0 and Flash Player 17.0

AIR 17.0 for iOS allows you to generate 64-bit binaries along with the default 32-bit binaries of your applications to comply with the Apple requirement for iOS applications. With the AIR 17.0 update for iOS, the **Enable Faster Packaging** option under the **Deployment** tab of **AIR for iOS Setting** dialog has been enabled by default.

Deploying AIR applications on iOS devices directly

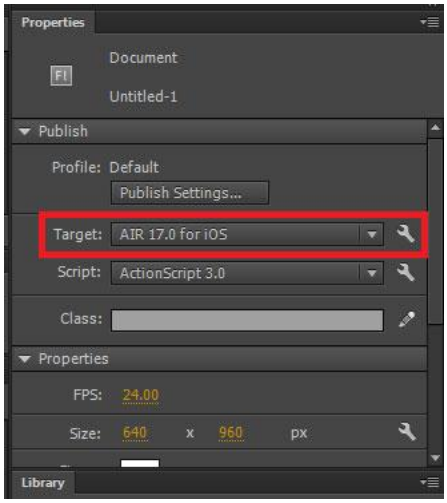
An important change to the AIR application deployment workflow allows you to deploy AIR applications directly to iOS devices. Earlier, to deploy applications to iOS devices, invoking AIR applications from iTunes was necessary.

However, with Animate, you can deploy AIR applications on iOS directly, bypassing the usage of iTunes. This feature reduces the time required to publish an AIR application for iOS and improves productivity and performance significantly.

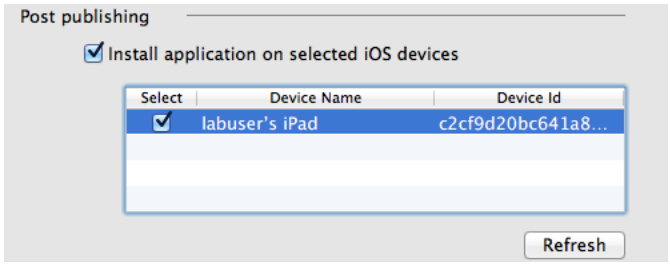
Note: It is necessary that you install iTunes on the machine that has Animate installed.

To enable direct deployment on an iOS device, do the following:

1. Ensure that iTunes is installed on the machine on which you have Animate installed.
2. In Animate, on the **Properties** panel, click the button, beside the **Target** drop-down to bring up the **AIR for iOS Settings** dialog.



? On the **Deployment** tab, select **Install Application On The Connected iOS Device** option.



? Click **Publish**.

Testing and debugging AIR applications using the native iOS simulator

Animate can be integrated with Apple Xcode to enable Native iOS Simulator to test and debug AIR applications written for iOS. The iOS Simulator is highly useful when you do not have access to actual devices (iPhone or iPad). With the Native iOS Simulator, you can also test and debug AIR applications across multiple devices (iPhone and iPad). However, the iOS Simulator can be integrated with Flash CS6 that runs on Macintosh systems only.

To use the iOS Simulator, Animate requires you to download and install Xcode. For more information, see Setting up Xcode for iOS Simulator Support.

Note:

- Download and install the latest version of AIR to work with the iOS simulator.
- Since SDK version 16 onwards (CC 2014.2 update), Animate CC installs and launches the iOS app on the IOS simulator.

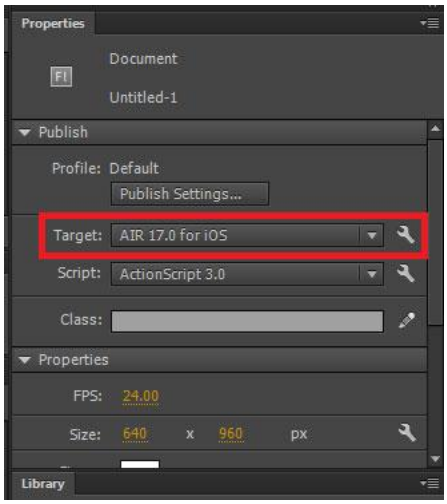
Setting up Xcode for iOS Simulator Support

1. Download and install Xcode from http://developer.apple.com or download from Mac App Store.
2. Launch Animate.

3 Create or open an existing AIR for iOS document.

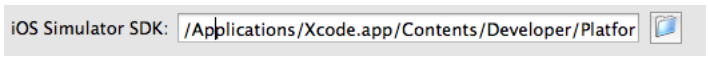
4 On the **Properties** panel, set the Player target to the latest AIR version.

5 Click the button, beside the **Target** drop-down to bring up the **AIR for iOS Settings** dialog.

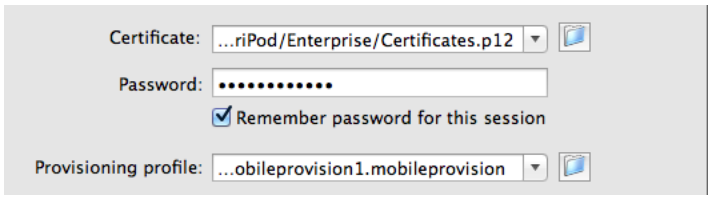


? On the **General** tab, provide the fully qualified path to the **iOS Simulator SDK** manually or browse to location. For example:

```
Applications/Xcode.app/Contents/Developer/Platforms/iPhoneSimulator.platform/Developer/SDKs/
iPhoneSimulator6.0.sdk
```



? On the **Deployment** tab, provide the **Certificate** and **Password**. Optionally, provide the **Provisioning Profile** for the AIR application.



? Click **OK** to finish.

You can now use the iOS Simulator to test and debug your application. For information, see Testing AIR applications using the Natives iOS Simulator and Debugging AIR applications using the Native iOS Simulator.

Testing AIR applications using the Native iOS Simulator

Ensure that you have set up Xcode and set the path to iPhone SDK before testing your AIR application.

1 In Animate, **Control** > **Test Movie** > **on iOS Simulator** to bring up the iOS Simulator. However, if you have not set the **iOS Simulator SDK** path in **AIR for iOS Settings** dialog, an error is thrown to indicate the same.

2 Browse to your application on the iOS Simulator, and click to launch.

Debugging AIR applications using the Native iOS Simulator

Ensure that you have set up Xcode and set the path to iPhone SDK path before debugging your AIR application.

1 In Animate, select **Debug** > **Debug Movie** > **on iOS Simulator** to bring up the iOS Simulator. However, if you have not set the **iOS Simulator SDK** path in **AIR for iOS Settings** dialog, an error is thrown to indicate the same.

2 In Animate, select **Debug** > **Begin Remote Debugging Session** > **ActionScript 3.0**.

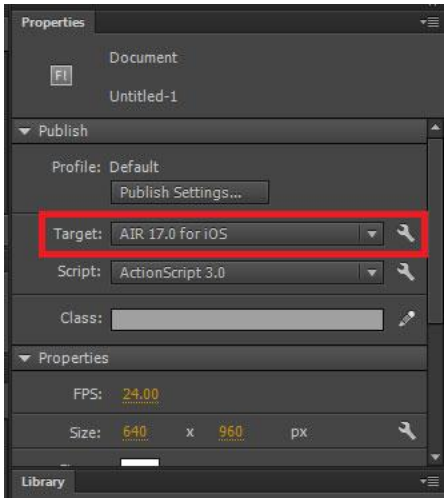
3 Browse to your application on iOS Simulator, and click to launch.

Publishing AIR applications for devices with High Resolution Retina Display support

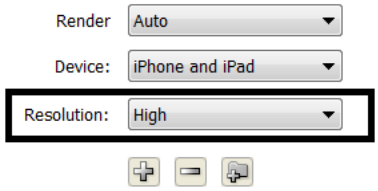
Animate allows you to create rich AIR applications for iOS with an extended support for High-resolution Retina display. You can choose to select High-resolution Retina Display when publishing AIR applications.

1 In Animate, create or open an existing AIR for iOS document.

2 On the **Properties** panel, click the button beside the **Target** drop-down to bring up the **AIR for iOS Settings** dialog.



? On the **General** tab, set the **Resolution** as *High*.



? Click **Publish**.

Test and debug using Interpreter Mode

The **Interpreter Mode** allows you to quickly debug or test your AIR applications written for iOS. When the **Interpreter Mode** is selected, AIR applications are installed without converting to ARM code.

To enable the **Interpreter Mode**, do the following:

1. On the **Properties** panel, click the button, beside the **Target** drop-down to bring up the **AIR for iOS Settings** dialog.
2. On the **Deployment** tab, select **D**evice Testing In Interpreter Mode or **D**evice Debugging In Interpreter Mode for the iOS deployment type option.
3. Click **OK** to finish.

Note:

You can package and load multiple SWFs that contain ActionScript byte code using both the Interpreter and AOT (Ahead of Time) modes. For more information, see this blog.

Note:

*The **Interpreter Mode** should only be used for testing or debugging purposes. The AIR installation files produced using the **Interpreter Mode** cannot be uploaded to the Mac App Store.*

Testing and debugging on iOS via USB

You can test and debug applications on iOS devices connected via USB. This adds on to the remote testing and debugging functionality via wi-fi available within Animate CC. However, by connecting devices via USB, testing, and debugging workflows are simplified by reducing the number of manual steps and in effect, expediting the testing and debugging processes.

To enable testing or debugging via USB, do one of the following:

- **(For debugging)** Select **Debug** > **Debug Movie** > **on Device Via USB**.
- **(For testing)** Select **Control** >**Test Movie** > **on Device Via USB**.

Multi-device connectivity via USB

Animate supports testing of applications on multiple devices simultaneously. You can connect to and test multiple devices via USB.

You can take advantage of this feature to test by deploying to multiple devices of varying screen sizes, OS versions, and hardware configurations simultaneously. This allows you to analyze performance of your application across a spectrum of devices at once.

1. On the **Properties** panel, click the button, beside the **Target** drop-down to bring up the **AIR for iOS Settings** dialog.
2. On the **Deployment** tab, a list of all connected devices is displayed. Select devices on to which you wish to publish the application.
3. Click **Publish**.

Adding xxhdpi icons (144x144)

You can manually add xxhdpi icons for an AIR application using the app-descriptor.xml file. Animate CC allows you to add xhdpi icons (96x96) icons using the Manage AIR SDK dialog. However, if you wish to add icons of higer resolution, you can manually add them in the app-descriptor.xml file for your AIR application using the following tag:

<icon><image144x144>{Location of png}/[icon_name-144x144].png</image144x144></icon>

For more information about the app-descriptor.xml file, see this help article.

Troubleshooting

- Publishing an AIR for iOS application fails if the file name specified for the FLA or the SWF contain double-byte characters.
- When publishing an AIR for iOS application, Animate hangs if the device is unplugged.

Note:

Air for iOS supports three new languages:

- Danish
- Hebrew
- Norwegian

Publishing AIR for Android applications

Animate CC allows you to publish content for Adobe® AIR™ for Android.

This article describes configuring the AIR for Android publish settings in Animate. For complete information about developing Adobe AIR™ applications, see Building Adobe AIR Applications.

For information about hardware and software requirements for desktop and mobile AIR applications, see AIR system requirements.

For complete AIR developer documentation see the Adobe AIR Reference.

Videos and tutorials

The following video tutorials describe how to create AIR™ for Android applications in Animate:

- Blog/Video: One Application, Five Screens (Christian Cantrell, Adobe blogs)
- Article: Developing a Mobile Application with Animate (John Hattan, gamedev.net)

Note:

(AIR 3.7 only) *Packaging applications with only captive runtime (Android)*

With AIR 3.7, packaging of AIR applications for Android in any target will embed the AIR runtime. This would help in improving the user-experience as there would be no need to download the AIR runtime separately. A side-effect would however be that there would be an increase in app size of around 9MB.

Animate displays warnings if an AIR for Android application was packaged using the Shared Runtime option.

Create an Adobe AIR for Android file

You can create Adobe AIR for Android documents in Animate using the File > New command. You can also create an ActionScript® 3.0 FLA file and convert it to an AIR for Android file through the Publish Settings dialog box.

To create an AIR for Android file, do one of the following:

- Choose AIR for Android from the Welcome screen or the New Document dialog box (File > New).
- Open an existing FLA file and convert it to an AIR for Android file. Select AIR for Android from the Target menu in the Publish Settings dialog box (File > Publish Settings).

Preview or publish an AIR for Android application

You can preview a Animate AIR for Android SWF file as it would appear in the AIR application window. Previewing is useful when you want to see what the visible aspects of the application look like without packaging and installing the application.

1. Make sure you've set the Target setting in the Publish Settings dialog box to AIR for Android.
2. Select Control > Test Movie > Test or press Control+Enter.

If you have not set application settings through the Application & Installer Settings dialog box, Animate enerates a default application descriptor file (swfname-app.xml) for you. Animate creates the file in the same folder where the SWF file is written. If you have set application settings using the Application & Installer Settings dialog box, the application descriptor file reflects those settings.

To publish an AIR for Android file, do one of the following:

- Click the Publish button in the Publish Settings dialog box.
- Click the Publish button in the AIR for Android Settings dialog box.
- Choose File > Publish.
- Choose File >Publish Preview.

When you Publish an AIR file, Animate creates a SWF file and XML application descriptor file. Then Animate packages copies of both, along with any other files you have added to your application, into an AIR installer file (swfname.apk).

Creating AIR for Android applications

After you've finished developing your application, specify the settings for the AIR for Android application descriptor and installer files required to deploy it. Animate creates the descriptor and installer files along with the SWF file when you publish an AIR for Android file.

You specify the settings for these files in the AIR for Android - Application & Installer Settings dialog box. Once you have created an AIR for Android file, this dialog box can be opened from the document Property inspector. You can also access it from the Player menu Settings button in the Animate tab of the Publish Settings dialog box.

Create the Adobe AIR application file

1. In Animate, open the FLA file or set of files that make up your Adobe AIR application.
2. Save the AIR for Android FLA file before you open the AIR Application & Installer Settings dialog box.
3. Select File > AIR for Android Settings.
4. Complete the AIR for Android Application & Installer Settings dialog box, and then click Publish.

When you click the Publish button, the following files are packaged:

- The SWF file
- The application descriptor file
- The application icon files
- The files listed in the Included Files text box

Note:

Publishing an AIR for Android application fails if the file name specified for the FLA or the SWF contain double-byte characters.

The AIR for Android Application and Installer Settings dialog box is divided into four tabs: General, Deployment, Icons, and Permissions.

General settings

The General tab of the AIR for Android Application and Installer Settings dialog box contains the following options:

Output file The name and location of the AIR file to create when using the Publish command. The output filename extension is APK.

App Name The name used by the AIR application installer to generate the application filename and the application folder. The name must contain only valid characters for filenames or folder names. Defaults to the name of the SWF file.

App ID Identifies your application with a unique ID. You can change the default ID if you prefer. Do not use spaces or special characters in the ID. The only valid characters are 0-9, a-z, A-Z, and . (dot), from 1 to 212 characters in length. Defaults to *com.adobe.example.applicationName.*

Version Optional. Specifies a version number for your application. Defaults to 1.0.

Version label Optional. A string to describe the version.

Aspect Ratio Allows you to select Portrait, Landscape, or Auto orientation for the application. When Auto is selected along with Auto orientation, the application launches on the device depending on its current orientation.

Full Screen Sets the application to run in full screen mode. This setting is deselected by default.

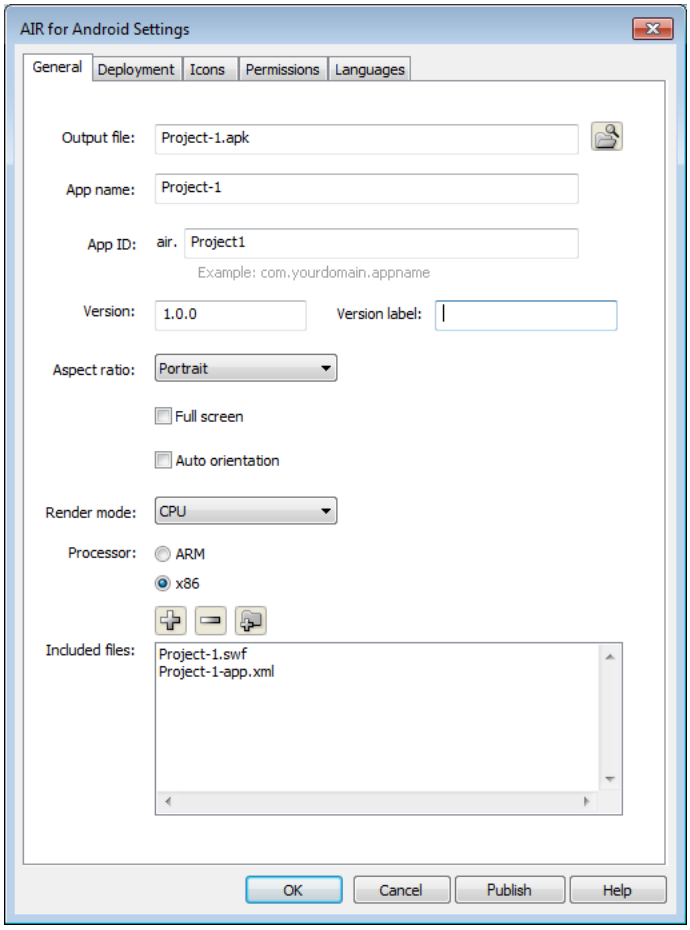
Auto orientation Allows the application to switch from portrait to landscape mode, depending on the current orientation of the device. This setting is deselected by default.

Render mode Allows you to specify which method the AIR runtime uses to render graphic content. The options include:

- Auto - automatically detect and use the fastest rendering method available on the host device.
- CPU - Use the CPU.
- GPU - Use the GPU. If no GPU is available, the CPU is used.
- Direct - Render using Stage3D. This is the fastest available rendering method.

For a list of processors that do not support Direct mode, see Stage3D unsupported chipsets, drivers | Flash Player 11, AIR 3.

Processor: Allows you to select the processor type of the devices that you are publishing the application for. The supported processor types are **ARM** and Intel **x86**. Support for x86 processors is available since the Animate CC 2014.1 release.



Included Files Specifies which additional files and folders to include in your application package. Click the Plus (+) button to add files, and the folder button to add folders. To delete a file or folder from your list, select the file or folder and click the Minus (-) button.

By default, the application descriptor file and the main SWF file are automatically added to the package list. The package list shows these files even if you have not yet published the Adobe AIR FLA file. The package list displays the files and folders in a flat structure. Files in a folder are not listed, and full paths to files are shown but are truncated if necessary.

If you have added any AIR native extension files to the ActionScript library path, those files will appear in this list as well.

Icon files are not included in the list. When Animate packages the files, it copies the icon files to a temporary folder that is relative to the location of the SWF file. Animate deletes the folder after packaging is complete.

Deployment settings

The Deployment tab of the AIR for Android Application and Installer Settings dialog box lets you specify the following settings.

Certificate The digital certificate for the application. You can browse to a certificate or create a new one. For information about creating a digital certificate, see Signing your application. Note certificates for Android applications must have a validity period set to at least 25 years.

Password The password for the selected digital certificate.

Deployment type Specifies which type of package to create.

- The Device Release setting allows you to create packages for the marketplace or any other distribution medium such as a website.
- The Emulator Release setting allows you to create packages for debugging in the Mobile Device Simulator.
- The Debug setting allows you to do on-device debugging, including setting breakpoints in Animate and remote debugging the application running on the Android device. You can also choose which netwirk interface and IP address to use for debugging sessions.

AIR runtime Specifies how the application should behave on devices that do not already have the AIR runtime installed.

- **Embed AIR runtime with application** adds the runtime to the application installer package so that no additional download will be required. This increases the size of your application package significantly.
- **Get AIR runtime from** makes the installer to download the runtime from Google Playstore or Amazon Appstore.

After publish Allows you to specify whether to install the application on a currently connected Android device, and whether to immediately launch the application after the installation.

Icons settings

The Icons tab of the AIR for Android Application And Installer Settings dialog box lets you specify an icon for the Android application. The icon is shown after you install the application and run it in the AIR for Android runtime. You can specify different sizes for the icon for different views in which the icon appears. The icons you choose for Android do not have to strictly adhere to these sizes.

To specify an icon, click an icon size in the Icons tab and then navigate to the file you want to use for that size. The files must be in PNG (Portable Network Graphics) format.

If you do not supply an image for a particular icon size, Adobe AIR scales one of the supplied images to create the missing icon image.

Permissions settings

The Permissions tab allows you to specify which services and data the application has access to on the device.

- To apply a permission, select its checkbox.
- To see a description of a permission, click the permission name. The description appears below the permission list.
- To manually manage permissions instead of using the dialog box, select “Manually manage permissions and manifest additions in the application descriptor file”.

Languages settings

The Languages pane alllows you to select the languages that you want your application to be associated with in the application store or marketplace. By selecting a language, you enable users of the Android operating system in that language to download your application. Note that these language settings do not do anything else to localize your application user interface.

If no languages are selected, the application is published with all languages supported. This prevents you from needing to select every language. The languages listed are those supported by Adobe AIR. Android may support additional languages.

Note:

Air for android supports three new languages:

- Danish
- Hebrew
- Norwegian.

Publishing for Adobe AIR for desktop

About Adobe AIR

Adobe® AIR™ is a cross-operating system runtime that allows you to leverage your existing web development skills (Adobe® Animate®, Adobe® Flex™, Adobe® Flash Builder™ HTML, JavaScript®, Ajax) to build and deploy Rich Internet Applications (RIAs) to the desktop. AIR enables you to work in familiar environments, to leverage the tools and approaches you find most comfortable, and by supporting Animate, Flex, HTML, JavaScript, and Ajax, to build the best possible experience that meets your needs.

Users interact with AIR applications in the same way that they interact with native desktop applications. The runtime is installed once on the user's computer, and then AIR applications are installed and run just like any other desktop application. The runtime provides a consistent cross-operating system platform and framework for deploying applications and therefore eliminates cross-browser testing by ensuring consistent functionality and interactions across desktops. Instead of developing for a specific operating system, you target the runtime.

AIR dramatically changes how applications can be created, deployed, and experienced. You gain more creative control and can extend your Animate, Flex, HTML, and Ajax-based applications to the desktop, without learning traditional desktop development technologies.

For information about hardware and software requirements for desktop and mobile AIR applications, see AIR system requirements.

For complete information about developing Adobe AIR™ applications, see Building Adobe AIR Applications.

Create an Adobe AIR file

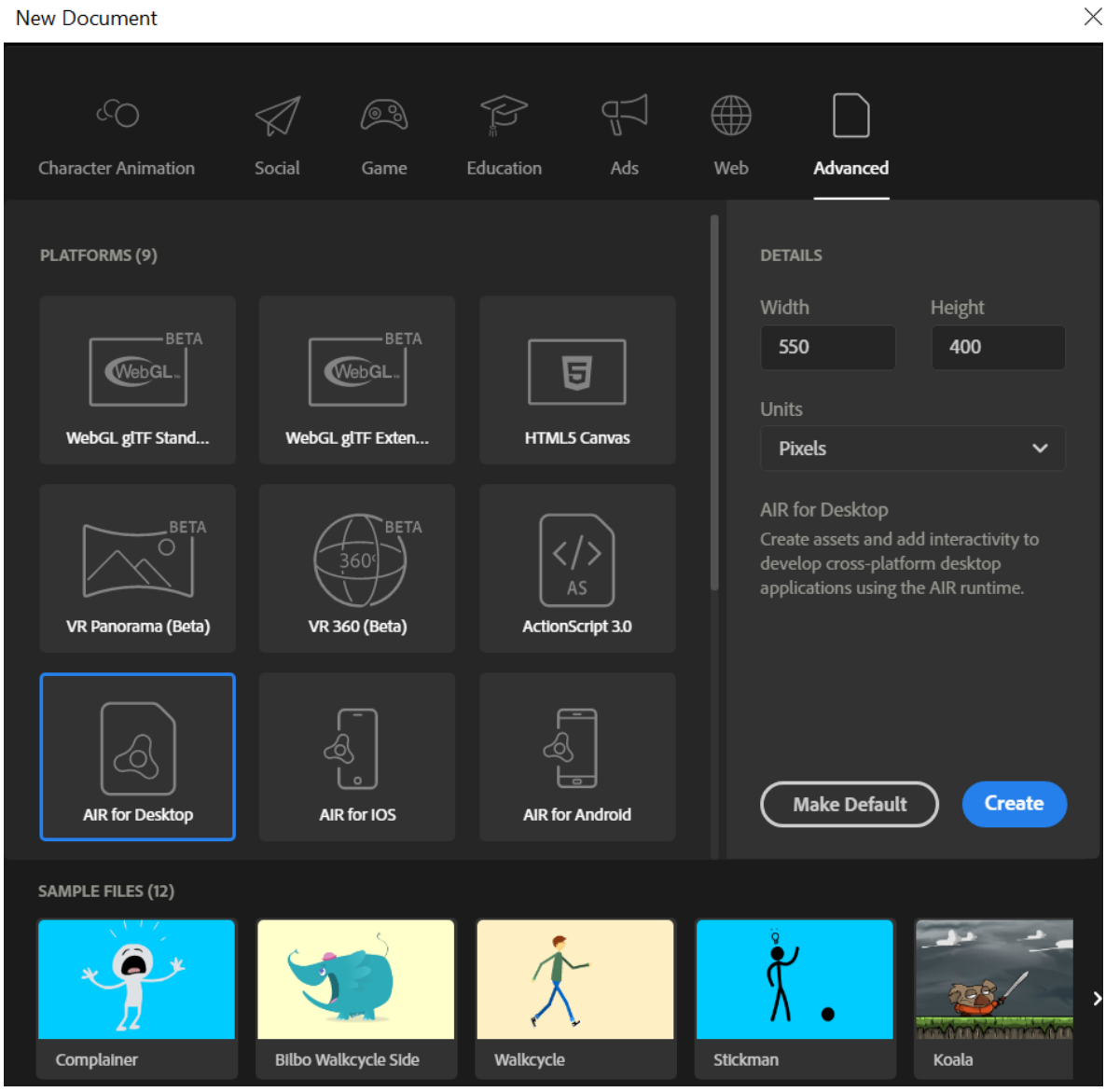
You can create Adobe AIR Animate documents using the Animate Welcome screen, or the File > New command, or you can create an ActionScript® 3.0 Animate File and convert it to an Adobe AIR file through the Publish Settings dialog box.

To create an Adobe AIR file, do one of the following:

- Start Animate. The Welcome screen appears. If you have already started Animate, close any open documents to return to the Welcome screen. In the Welcome screen, select Adobe AIR 2 (CS5) or AIR (CS5.5).

  Note: If you've disabled the Animate Welcome screen, you can display it again by selecting Edit > Preferences and selecting Welcome Screen from the On Launch pop-up menu in the General category.

- Choose File > New and select Adobe AIR 2 (CS5) or AIR (CS5.5) and click OK



Template Air

- Open an existing Animate file and convert it to an AIR file by selecting Adobe AIR from the Player menu in the Animate tab of the Publish Settings dialog box (File > Publish Settings).

Note:

(Flash CS5 only) If you save a Flash CS5 AIR file in Flash CS4 format, set the Player version to AIR 1.5 manually in the Publish Settings dialog box when opening the file in Flash CS4. Flash CS4 only supports publishing to AIR 1.5.

Preview or publish an Adobe AIR application

You can preview an AIR SWF file as it would appear in the AIR application window. Previewing is useful when you want to see what the visible aspects of the application look like without packaging and installing the application.

1. Make sure you've set the Target setting in the Animate tab of the Publish Settings dialog box to Adobe AIR.
2. Select Control > Test Movie > Test or press Control+Enter.

If you have not set application settings through the AIR - Application And Installer Settings dialog box, Animate generates a default application descriptor file (swfname-app.xml) for you in the same folder where the SWF file is written. If you have set application settings using the AIR Application & Installer Settings dialog box, the application descriptor file reflects those settings.

To publish an AIR file, do one of the following:

- Click the Publish button in the Publish Settings dialog box.
- Click the Publish button in the AIR Application & Installer Settings dialog box.
- Choose File > Publish.
- Choose File >Publish Preview.

When you Publish an AIR file, Animate creates a SWF file and XML application descriptor file and packages copies of both, along with any other files you have added to your application, into an AIR installer file (swfname.air).

Note:

(Windows only) *Publishing of AIR application fails if the file name contains non-english characters.*

Creating AIR application and installer files

After you've finished developing your application, specify the settings for the AIR application descriptor and installer files required to deploy it. Animate creates the descriptor and installer files along with the SWF file when you publish an AIR file.

You specify the settings for these files in the AIR - Application & Installer Settings dialog box. Once you have created an AIR file, this dialog box can be opened from either the document Property inspector or the Player menu Settings button in the Animate tab of the Publish Settings dialog box.

Create the Adobe AIR application and installer files

1. In Animate, open the FLA file or set of files that make up your Adobe AIR application.
2. Save the Adobe AIR FLA file before you open the AIR Settings dialog box.
3. Select File > AIR 2 Settings.
4. Complete the AIR Settings dialog box, and then click Publish.

   When you click the Publish button, the following files are packaged: the SWF file, the application descriptor file, the application icon files, and the files listed in the Included Files text box. If you have not already created a digital certificate, Animate displays the Digital Signature dialog box when you click the Publish button.

The AIR Application And Installer Settings dialog box is divided into 4 tabs: General, Signature, Icons, and Advanced. For more information on these settings, see the following sections.

General settings

The General tab of the AIR Application And Installer Settings dialog box contains the following options:

Output file The name and location of the .air file to create when using the Publish command.

Output as The type of package to create.

- AIR package - Creates a standard AIR installer file that assumes the AIR runtime can be separately downloaded during installation or is already installed on the target device.
- Mac installer - Creates a complete Macintosh installer file.
- Application with runtime embedded - Creates an AIR installer file that contains the AIR runtime so no additional download is required.

Windows Installer Select this option to compile a native, platform specific Windows installer (.exe) instead of a platform-independent AIR installer (.air).

Name The name of the main file of the application. Defaults to the name of the FLA file.

Version Optional. Specifies a version number for your application. Defaults to 1.0.

App ID Identifies your application with a unique ID. You can change the default ID if you prefer. Do not use spaces or special characters in the ID. The only valid characters are 0-9, a-z, A-Z, . (dot), and - (dash), from 1 to 212 characters in length. Defaults to *com.adobe.example.applicationName*.

Description Optional. Lets you enter a description of the application to display in the installer window when the user installs the application. Defaults to blank.

Copyright Optional. Lets you enter a copyright notice. Defaults to blank.

Window Style Specifies what window style (or chrome) to use for the user interface when the user runs the application on their computer. You can specify System Chrome (the default), which refers to the standard window visual style that the operating system uses. You can also specify Custom Chrome (opaque) or Custom Chrome (transparent). To display your application without the system chrome, select None. System Chrome surrounds the application with the operating-system standard window control. Custom Chrome (opaque) eliminates the standard system chrome and lets you create a chrome of your own for the application. (You build the custom chrome directly in the FLA file.) Custom Chrome (transparent) is like Custom Chrome (opaque), but it adds transparent capabilities to the edges of the page. These capabilities allow for application windows that are not square or rectangular in shape.

Render mode Allows you to specify which method the AIR runtime uses to render graphic content. The options include:

- Auto - automatically detect and use the fastest rendering method available on the host device.
- CPU - Use the CPU.
- Direct - Render using Stage3D. This is the fastest available rendering method.

For a list of processors that do not support Direct mode, see Stage3D unsupported chipsets, drivers | Flash Player 11, AIR 3.

Profiles Which profiles to include when building the AIR file. To limit your AIR application to a specific profile, deselect the unneeded profiles.

Included Files Specifies which additional files and folders to include in your application package. Click the Plus (+) button to add files, and the folder button to add folders. To delete a file or folder from your list, select the file or folder and click the Minus (-) button.

By default, the application descriptor file and the main SWF file are automatically added to the package list. The package list shows these files even if you have not yet published the Adobe AIR FLA file. The package list displays the

files and folders in a flat structure. Files in a folder are not listed, and full path names to files are shown but are truncated if necessary.

If you have added any AIR native extension files to the ActionScript library path, those files will appear in this list as well.

Icon files are not included in the list. When Animate packages the files, it copies the icon files to a temporary folder that is relative to the location of the SWF file. Animate deletes the folder after packaging is complete.

Signature settings

The Signature tab of the AIR Application & Installer Settings dialog box allows you to specify a code signing certificate for your application.

For more information about digital signatures, see Signing your applicationand Digitally signing an AIR file.

Icons settings

The Icons tab of the AIR Application And Installer Settings dialog box lets you specify an icon for the application. The icon is shown after you install the application and run it in the Adobe AIR runtime. You can specify four different sizes for the icon (128, 48, 32, and 16 pixels) to allow for the different views in which the icon appears. For example, the icon can appear in the file browser in thumbnail, detail, and tile views. It can also appear as a desktop icon and in the title of the AIR application window, as well as in other places.

The icon image defaults to a sample AIR application icon if no other icon files are specified (Flash CS5 only).

To specify an icon, click an icon size at the top of the Icons tab and then navigate to the file you want to use for that size. The files must be in PNG (Portable Network Graphics) format.

If you do specify an image, it must be the exact size (either 128x128, 48x48, 32x32, or 16x16). If you do not supply an image for a particular icon size, Adobe AIR scales one of the supplied images to create the missing icon image.

Advanced settings

The Advanced tab allows you to specify additional settings for the application descriptor file.

You can specify any associated file types that your AIR application should handle. For example, if you wanted your application to be the principal application for handling HTML files, you would specify that in the Associated File Types text box.

You can also specify settings for the following aspects of the application:

- The size and placement of the initial window
- The folder in which the application is installed
- The Program menu folder in which to place the application.

The dialog box has the following options:

Associated file types Lets you specify associated file types that the AIR application will handle. Click the Plus (+) button to add a new file type to the text box. Clicking the Plus button displays the File Type Settings dialog box. Clicking the Minus (-) button removes an item that is selected in the text box. Clicking the Pencil button displays the File Type Settings dialog box and allows you to edit an item that you've selected in the text box. By default, the Minus (-) and Pencil buttons are dimmed. Selecting an item in the text box enables the Minus (-) and Pencil buttons, allowing you to remove or edit the item. The default value in the text box is None.

Initial window settings Lets you specify size and placement settings for the initial application window.

- Width: Specifies the initial width of the window in pixels. The value is blank by default.

- Height: Specifies the initial height of the window in pixels. The value is blank by default.
- X: Specifies the initial horizontal position of the window in pixels. The value is blank by default.
- Y: Specifies the initial vertical position of the window in pixels. The value is blank by default.
- Maximum Width and Maximum Height: Specify the maximum size of the window in pixels. These values are blank by default.
- Minimum Width and Minimum Height: Specify the minimum size of the window in pixels. These values are blank by default.
- Maximizable: Lets you specify whether the user can maximize the window. This option is selected (or true) by default.
- Minimizable: Lets you specify whether the user can minimize the window. This option is selected (or true) by default.
- Resizable: Lets you specify whether the user can resize the window. If this option is not selected, Maximum Width, Maximum Height, Minimum Width, and Minimum Height are dimmed. This option is selected (or true) by default.
- Visible: Lets you specify whether the application window is visible initially. The option is selected (or true) by default.

Other Settings Lets you specify the following additional information regarding the installation:

- Install Folder: Specifies the folder in which the application is installed.
- Program Menu Folder (Windows only): Specifies the name of the program menu folder for the application.
- Use Custom UI for Updates: Specifies what happens when a user opens an AIR installer file for an application that's already installed. By default, AIR displays a dialog box that allows the user to update the installed version with the version in the AIR file. If you don't want the user to make that decision and you want the application to have complete control over its updates, select this option. Selecting this option overrides the default behavior and gives the application control over its own updates.

Languages settings

The Languages pane alllows you to select the languages that you want your application to be associated with in the application store or marketplace. By selecting a language, you enable users of operating systems in that language to download your application. Note that these language settings do not do anything else to localize your application user interface.

If no languages are selected, the application is published with all languages supported. This prevents you from needing to select every language. The languages listed are those supported by Adobe AIR. Android may support additional languages.

File type settings

Animate displays the File Type Settings dialog box if you click the Plus (+) button or the Pencil button in the Associated File Types section of the Advanced tab to add or edit associated file types for the AIR application.

The only two required fields in this dialog box are Name and Extension. If you click OK and either of those fields is blank, Animate displays an error dialog box.

You can specify the following settings for an associated file type:

Name The name of the file type (for example, Hypertext Markup Language, Text File, or Example).

Extension The filename extension (for example, html, txt, or xmpl), up to 39 basic alphanumeric characters, (A-Za-z0-9), and without a leading period.

Description Optional. A description of the file type (for example, Adobe Video File).

Content type Optional. Specifies the MIME type for the file.

File Type Icon Settings Optional. Lets you specify an icon that's associated with the file type. You can specify four different sizes for the icon (128x128, 48x48, 32x32, and 16x16 pixels) to allow for the different views in which the icon appears. For example, the icon can appear in the file browser in thumbnail, detail, and tile views. If you specify an image, it must be of the size that you specify. If you do not specify a file for a particular size, AIR uses the image of the closest size and scales it to fit for the given occurrence. To specify an icon, either click the folder for the icon size and select an icon file to use or enter the path and filename for the icon file in the text box next to the prompt. The icon file must be in PNG format. After a new file type is created, it is shown in the File Type list box in the Advanced Settings dialog box.

Failure to create application and installer files

The application and installer files fail to be created in the following instances:

- The application ID string has an incorrect length or contains invalid characters. The application ID string can be from 1 to 212 characters and can include the following characters: 0-9, a-z, A-Z, . (dot), - (hyphen).
- Files in the Included Files list do not exist.
- The sizes of custom icon files are incorrect.
- The AIR destination folder does not have write access.
- You have not signed the application or have not specified that it is an Adobe AIRI application that will be signed later.

Signing your application

All Adobe AIR applications must be signed to be installed on another system. Animate provides the ability, however, to create unsigned Adobe AIR installer files so that the application can be signed later. These unsigned Adobe AIR installer files are called an AIRI (AIR Intermediate) package. This capability provides for cases in which the certificate is on a different machine or signing is handled separately from application development.

Sign an Adobe AIR application with a pre-purchased digital certificate from a root certificate authority

1. Choose File > AIR 2 Settings and then click on the Signature tab.

   This tab has two radio buttons that allow you to either sign your Adobe AIR application with a digital certificate or prepare an AIRI package. If you sign your AIR application, you can either use a digital certificate granted by a root certificate authority or create a self-signed certificate. A self-signed certificate is easy to create but is not as trustworthy as a certificate granted by a root certificate authority.

2. Select a certificate file from the pop-up menu or click the Browse button to locate a certificate file.
3. Select the certificate.
4. Enter a password.
5. Click OK.

For more information on signing your AIR application, see Digitally signing an AIR file.

Create a self-signed digital certificate

1. Click the Create button. The Self-Signed Digital Certificate dialog box opens.

2 Complete the entries for Publisher Name, Organization Unit, Organization Name, Country, Password, and Confirm Password. For Country, you can select from the menu or enter a 2-letter country code that does not appear in the menu. For a list of valid country codes, see http://www.iso.org/iso/country_codes.

3 Specify the type of certificate.

The Type option refers to the level of security that the certificate carries. 1024-RSA uses a 1024-bit key (less secure), and 2048-RSA uses a 2048-bit key (more secure). The default is 2048-RSA.

Note:

In Animate CC, 1024 RSA certificates are supported only up to 2017.2 version. For more information on the workaround, click here.

4 Save the information in a certificate file by completing the Save As entry or clicking the Browse button to browse to a folder location.

5 Click OK.

6 In the Digital Signature dialog box, enter the password you assigned in the second step of this procedure and click OK.

To have Animate remember the password you used for this session, click Remember Password For This Session.

If the Timestamp option is unselected when you click OK, a dialog box warns that the application will fail to install when the digital certificate expires. If you click Yes in response to the warning, time stamping is disabled. If you click No, the Timestamp option is automatically selected and time stamping is enabled.

For more information on creating a self-signed digital certificate, see Digitally signing an AIR file.

You can also create an AIR Intermediate (AIRI) application without a digital signature. A user cannot install the application on a desktop, however, until you add a digital signature.

Prepare an AIRI package that will be signed later

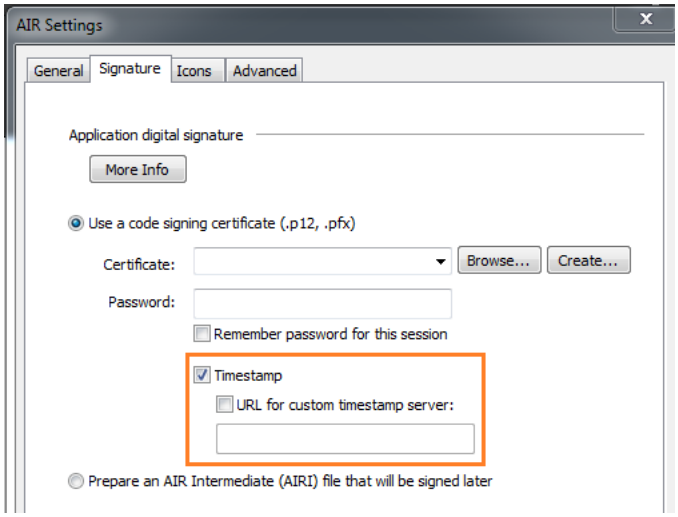
? In the Signature tab, select Prepare An AIR Intermediate (AIRI) File That Will Be Signed Later, and click OK.

The digital signature status changes to indicate that you have chosen to prepare an AIRI package that will be signed later, and the Set button changes to a Change button.

If you choose to sign the application later, you will need to use the command-line AIR Developer Tool included with Animate and with the AIR SDK. For more information, see Building Adobe AIR Applications.

Timestamp server URL

Animate supports the latest timestamp server along with an option to add URL for custom timestamp server.



Add or remove a version of the AIR SDK

You can add new releases and custom versions of the AIR SDK to Animate. Once added, the new SDK appears in the player target list in the Publish Settings.

To add an new verision of the SDK:

1. Download the new AIR SDK folder.
2. In Animate, choose Help > Manage AIR SDK.
3. In the Manage AIR SDK dialog, click the plus "+" button and then browse to the new AIR SDK folder. Click OK.
4. Click OK in the Manage AIR SDK dialog box.

The new SDK appears in the Player Target list in Publish Settings. The lowest acceptable SDK version should be greater than the version included with Animate.

To remove a version of the SDK:

1. In Animate, choose Help > Manage AIR SDK.
2. In the Manage AIR SDK dialog, select the SDK you want to remove.
3. Click the minus "-" button. Click OK.

Best practices - Organizing ActionScript in an application

Keeping actions together

Whenever possible, put your ActionScript® in a single location. Organizing your code in one place helps you edit projects more efficiently, because you can avoid searching in different places when you debug or modify the ActionScript. If you put code in a FLA file, put ActionScript on Frame 1 or Frame 2 in a layer called actions on the topmost layer in the Timeline. Alternatively, you might put all of your code in ActionScript files. Some Animate applications do not always put all code in a single place (in particular, ActionScript 2.0-based applications that use screens or behaviors).

You can usually put all your code in the same location (on a frame, or in ActionScript files), with the following advantages:

- Code is easy to find in a potentially complex source file.
- Code is easy to debug.

Attaching code to objects

Avoid attaching ActionScript to objects in a FLA file, even in simple SWF files. (Only ActionScript 1.0 and 2.0. can be attached to objects; ActionScript 3.0 cannot.) Attaching code to an object means that you select a movie clip, component, or button instance; open the Actions panel; and add ActionScript using the *on()* or *onClipEvent()* handler functions.

Attaching ActionScript code to objects is strongly discouraged for the following reasons:

- It is difficult to locate, and the FLA files are difficult to edit.
- It is difficult to debug.
- ActionScript that is written on the timeline or in classes is more elegant and easier to build upon.
- It encourages poor coding style.
- The contrast between two styles of coding can be confusing to people learning ActionScript; it forces students and readers to learn different coding styles, additional syntax, and a poor and limited coding style.

  Avoid attaching ActionScript 2.0 to a button called *myButton_btn*, which looks like the following:

```
on (release) { //do something }
```

  However, placing ActionScript 2.0 with the same purpose on the timeline (which is encouraged), looks like the following code:

```
myButton_btn.onRelease = function() { //do something };
```

  ***note**: Different practices apply when using behaviors, which sometimes involves attaching code to objects.*

How to use ActionScript with Animate CC

Getting started with ActionScript

The ActionScript® scripting language lets you add complex interactivity, playback control, and data display to your application. You can add ActionScript in the authoring environment by using the Actions panel, Script window, or an external editor.

ActionScript follows its own rules of syntax, reserved keywords, and lets you use variables to store and retrieve information. ActionScript includes a large library of built-in classes that let you create objects to perform many useful tasks. For more information on ActionScript, see the following Help titles:

- Learning ActionScript 3.0 at www.adobe.com/go/learn_flcs5_learnas3_en
- Learning ActionScript 2.0 in Adobe Animate at www.adobe.com/go/learn_cs5_learningas2_en

You do not have to understand every ActionScript element to begin scripting. If you have a clear goal, you can start building scripts with simple actions.

ActionScript and JavaScript are both rooted in the ECMA-262 standard, the international standard for the ECMAScript scripting language. For this reason, developers who are familiar with JavaScript can find ActionScript immediately familiar. For more information about ECMAScript, go to ecma-international.org.

Adobe recommends...

Adobe recommends...

Which version of ActionScript can you use?

Animate includes more than one version of ActionScript to meet the needs of different kinds of developers and playback hardware. ActionScript 3.0 and 2.0 are not compatible with each other.

- ActionScript 3.0 executes fast. This version requires more familiarity with object-oriented programming concepts than the other ActionScript versions. ActionScript 3.0 is fully compliant with the ECMAScript specification, offers better XML processing, an improved event model, and an improved architecture for working with onscreen elements. FLA files that use ActionScript 3.0 cannot include earlier versions of ActionScript.
- (Deprecated with Animate CC only) ActionScript 2.0 is simpler to learn than ActionScript 3.0. Although Flash Player runs compiled ActionScript 2.0 code slower than compiled ActionScript 3.0 code, ActionScript 2.0 is still useful for many kinds of projects. ActionScript 2.0 is also useful for the projects that are not computationally intensive. For example, more design-oriented content. ActionScript 2.0 is also based on the ECMAScript specification, but is not fully compliant.
- (Deprecated with Animate CC) ActionScript 1.0 is the simplest form of ActionScript, and is still used by some versions of the Adobe Flash Lite Player. ActionScript 1.0 and 2.0 can coexist in the same FLA file.
- (Deprecated with Animate CC) Flash Lite 2.x ActionScript is a subset of ActionScript 2.0 supported by Flash Lite 2.x on mobile phones and devices.
- (Deprecated with Animate CC) Flash Lite 1.x ActionScript is a subset of ActionScript 1.0 supported by Flash Lite 1.x on mobile phones and devices.

Using the ActionScript documentation

Due to multiple versions of ActionScript (2.0 and 3.0), and multiple ways of incorporating it into your FLA files, there are different ways to learn ActionScript.

You can find description about the graphical user interface for working with ActionScript. This interface includes the Actions panel, Script window, Script Assist mode, Behaviors panel, Output panel, and Compiler Errors panel. These topics apply to all versions of ActionScript.

Other ActionScript documentation from Adobe guides you to learn about the individual versions of ActionScript.

Ways of working with ActionScript

There are several ways to work with ActionScript.

- (Deprecated with Animate CC) Script Assist mode lets you add ActionScript to your FLA file without writing the code yourself. You select actions, and the software presents you with a user-interface for entering the parameters required for each one. Learn a little about what functions to use to accomplish specific tasks, but you don't have to learn syntax. Many designers and non-programmers use this mode.
- (Deprecated with Animate CC) Behaviors also let you add code to your file without writing it yourself. Behaviors are prewritten scripts for common tasks. You can add a behavior and then easily configure it in the Behaviors panel. Behaviors are available only for ActionScript 2.0 and earlier.
- Writing your own ActionScript gives you the greatest flexibility and control over your document. But, it requires you to become familiar with the ActionScript language and conventions.
- Components are prebuilt movie clips that enable you to implement complex functionality. A component can be a simple user interface control, such as a check box, or it can be a complicated control, such as a scroll pane. You can customize a component's functionality and appearance, and you can download components created by other developers. Most components require you to write some ActionScript code of your own to trigger or control a component. For more information, see Using ActionScript 3.0 Components.

Writing ActionScript

When you write ActionScript code in the authoring environment, you use the Actions panel or Script window. The **Actions** panel and Script window contain a full-featured code editor that includes code hinting and coloring, code formatting, and syntax highlighting features. It also contains debugging, line numbers, word wrapping, and support for Unicode.

- Use the Actions panel to write scripts that are part of your Animate document (that is, scripts that are embedded in the FLA file). The **Actions** panel provides features such as the Actions toolbox, which gives you quick access to the core ActionScript language elements. You get prompts for the elements that require to create scripts.
- Use the Script window if you want to write external scripts—that is, scripts or classes that are stored in external files. (You can also use a text editor to create an external AS file.) The Script window includes code-assistance features such as code hinting and coloring, syntax checking, and auto-formatting.

More recommended community content

- Getting started with ActionScript 3.0 (CS3) (3:25)
- Optimizing animations and FLA files (7:24) (CS3)
- Creating a Document class using ActionScript 3.0 (CS3) (2:38)
- Creating an effective workflow between design and development (CS3) (3:41)
- Using components (CS3) (1:47)
- YouTube.com list of ActionScript channels

The following **articles and tutorials** provide more detailed information about working with ActionScript:

- Introduction to ActionScript 3.0 (Slekx.com)
- ActionScript 3 migration table (Adobe.com)

Overview of the Output panel

When you execute any doc type, the Output panel displays information or warning related to operations such as document conversions and publish. To display this information, add trace() statements to your code or use the List Objects and List Variables commands.

If you use the trace() statement in your scripts, you can send specific information to the Output panel when the SWF file runs. It includes notes about the status of the SWF file status or the value of an expression.

Output panel

The **Output** panel consists of the following menu items:

- **Copy:** Copies all the contents of the Output panel to the clipboard of computer. To copy a selected portion of the output, select the area you want to copy and then select Copy.
- **Clear:** Clears the content of the output panel.
- **Show Output:** Displays the content of the output panel.
- **Lock:** Locks the panel. You can only resize the panel but you cannot move or drag the panel.
- **Help:** Loads the online Help for the output panel.
- **Close:** Closes the output panel.
- **Close Group:** Closes the whole panel group. You can simultaneously dock multiple panels such as timeline, output panel, and compiler errors panel.

To display or hide the output panel, select **Window** > **Output** or press F2.

Actions panel

Looking for the Language Reference?

To find reference documentation for a specific ActionScript language element, do one of the following:

- Open the ActionScript 3.0 Language Reference, and search for the language element.
- (Deprecated with Animate CC) Open the ActionScript 2.0 Language Reference, and search for the language element.
- Type the language element in the Actions panel, select it, then press F1 (Press F1 immediately).

Note:

To open the Help in a web browser instead of the Community Help application, see this article: http://kb2.adobe.com/community/publishing/916/cpsid_91609.html.

Learning ActionScript

To learn about writing ActionScript, use these resources:

- Learning ActionScript 3.0

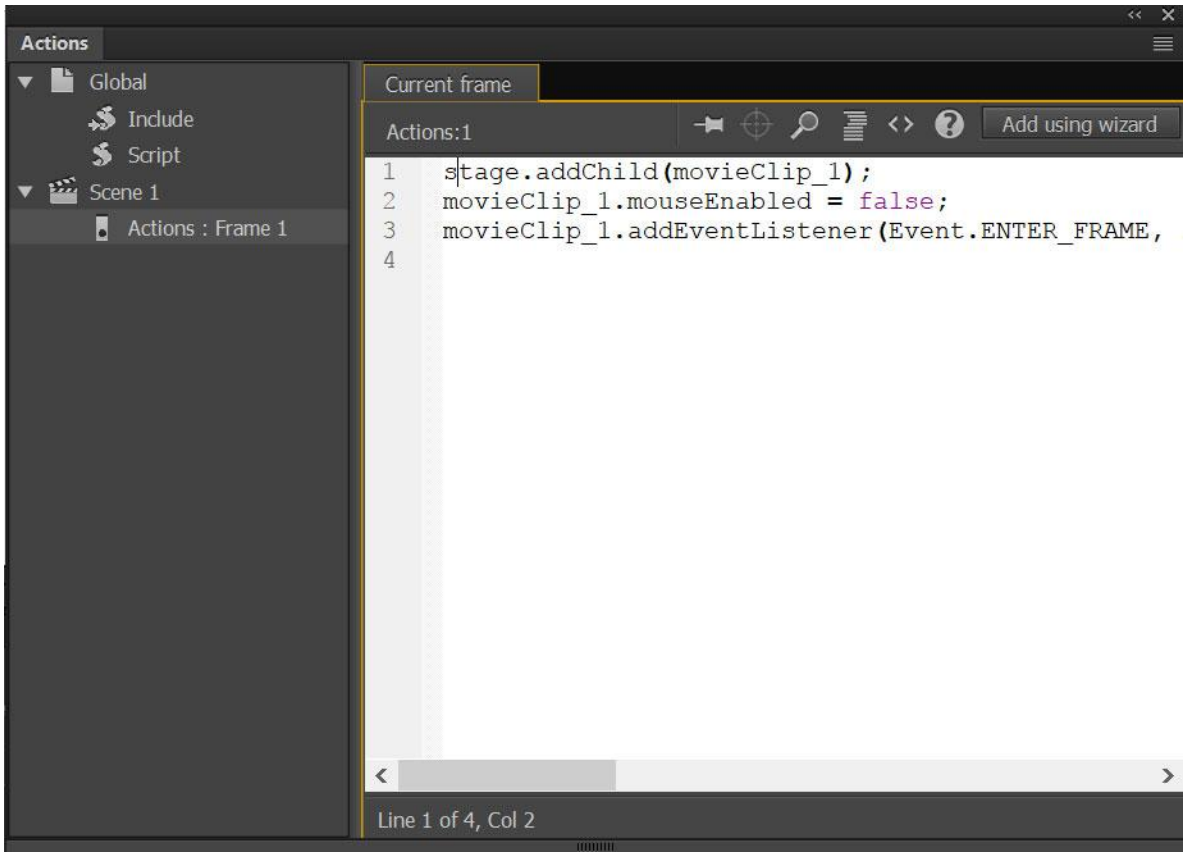
- ActionScript 3.0 Language and Components Reference
- Learning ActionScript 2.0 in Adobe Animate
- ActionScript 2.0 Language Reference

Note:

ActionScript 3.0 and 2.0 are not compatible with each other. Choose only one version for each FLA file you create.

Overview of the Actions panel

To create scripts embedded in a FLA file, enter ActionScript directly into the Actions panel (Window > Actions or press F9).



Actions Panel

The Actions panel consists of two panes:

Script pane Lets you type ActionScript code, which is associated with the currently selected frame.

Script navigator Lists the scripts in your Animate document, and lets you move quickly between them. To view the script in the Script pane, click an item in the Script navigator.

The **Actions panel** lets you access the code-assistance features that simplify and streamline coding in ActionScript. You can add non-frame specific global and third-party scripts that can be applied to the whole animation from within Animate. For more information, see Adding Global and Third-party scripts section in this page.

- **Run Script:** Runs the script

- **Pin Script:** Pins the script to the pin tabs of individual scripts in the Script pane and move them accordingly. This feature is useful if you have not organized the code within your FLA file into one central location. Or, it is useful if you are using multiple scripts. You can pin a script to retain the open location of the code in the Actions panel and toggle between the various open scripts. This feature can be useful when debugging.
- **Insert Instance Path and Name:** Helps you set an absolute or relative target path for an action in the script.
- **Find:** It finds and replaces text in your script.
- **Format Code:** Helps to format the code.
- **Code Snippets**: Opens the Code Snippets panel that displays sample code snippets.
- **Add using wizard:** Click this button to add actions using an easy-to-use wizard without having to write code.
- **Help:** Displays reference information for the ActionScript element that is selected in the Script pane. For example, if you click an import statement and then click Help, the reference information for import appears in the Help panel.

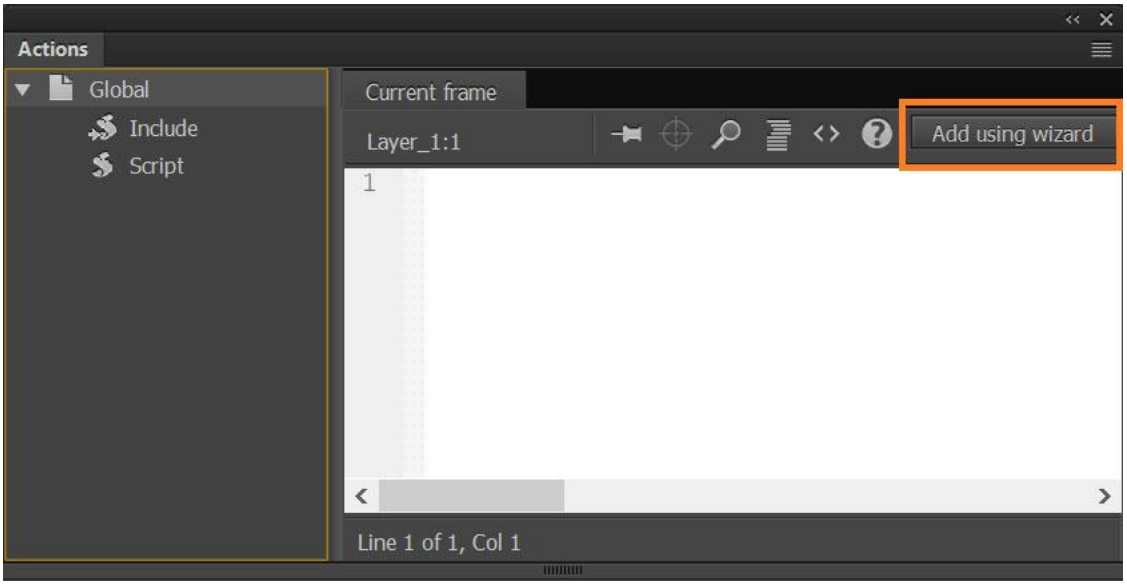
Using actions code wizard

You can add interactivity to HTML5 compositions with the **Add using wizard** options in **Actions** panel. Add using wizard is a simplified user interface to add code to your compositions.

Video

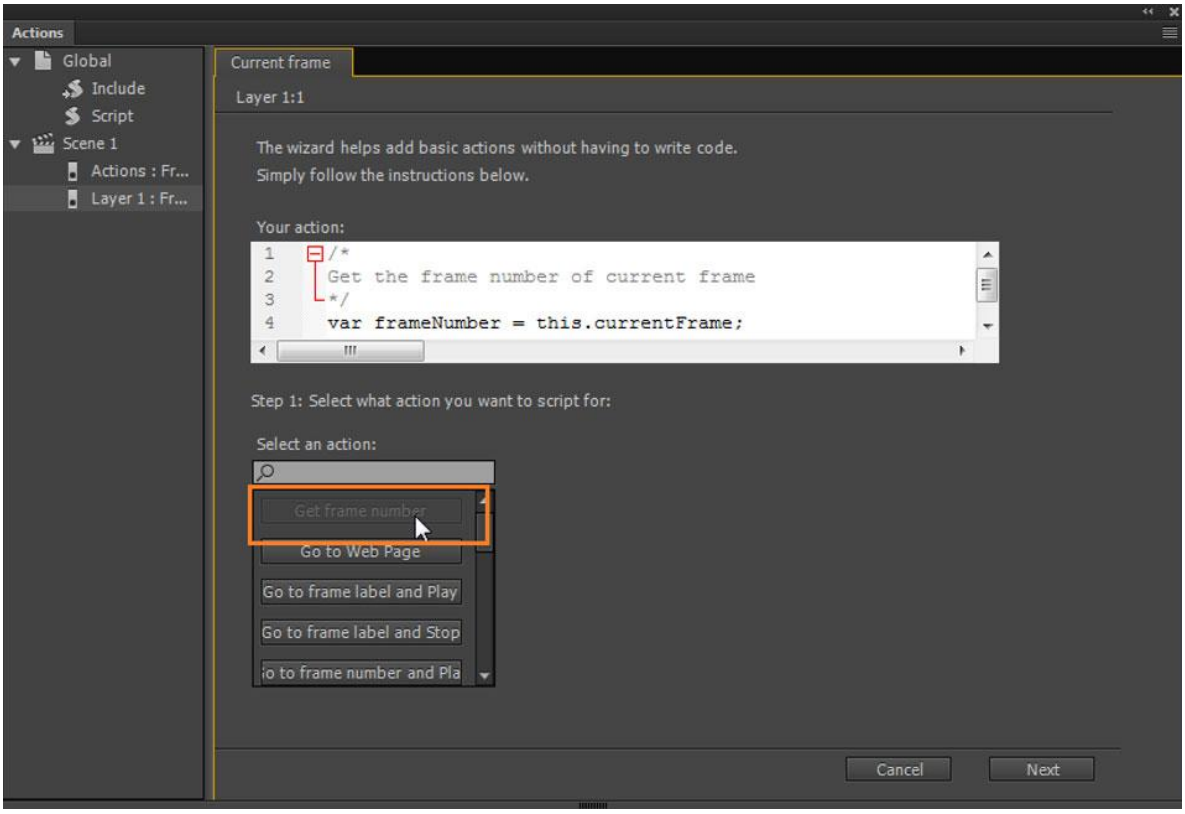
1 Create an HTML5 canvas document and click **Window > Actions.**

2 Click **Add using wizard** in **Actions** panel as shown in the following screenshot.



Actions panel with Add using wizard button

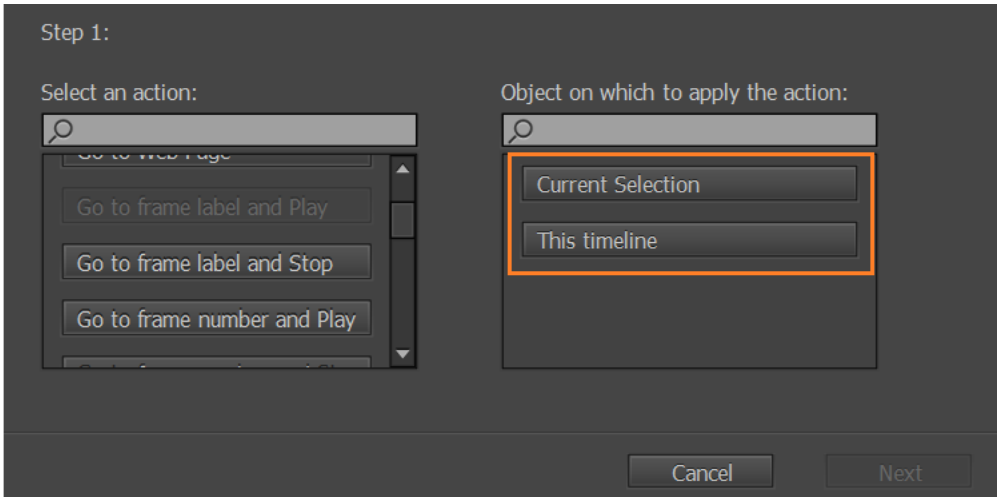
3 Select an action for which you want to create code using the code wizard.



A sample screenshot displaying action code wizard options for actions

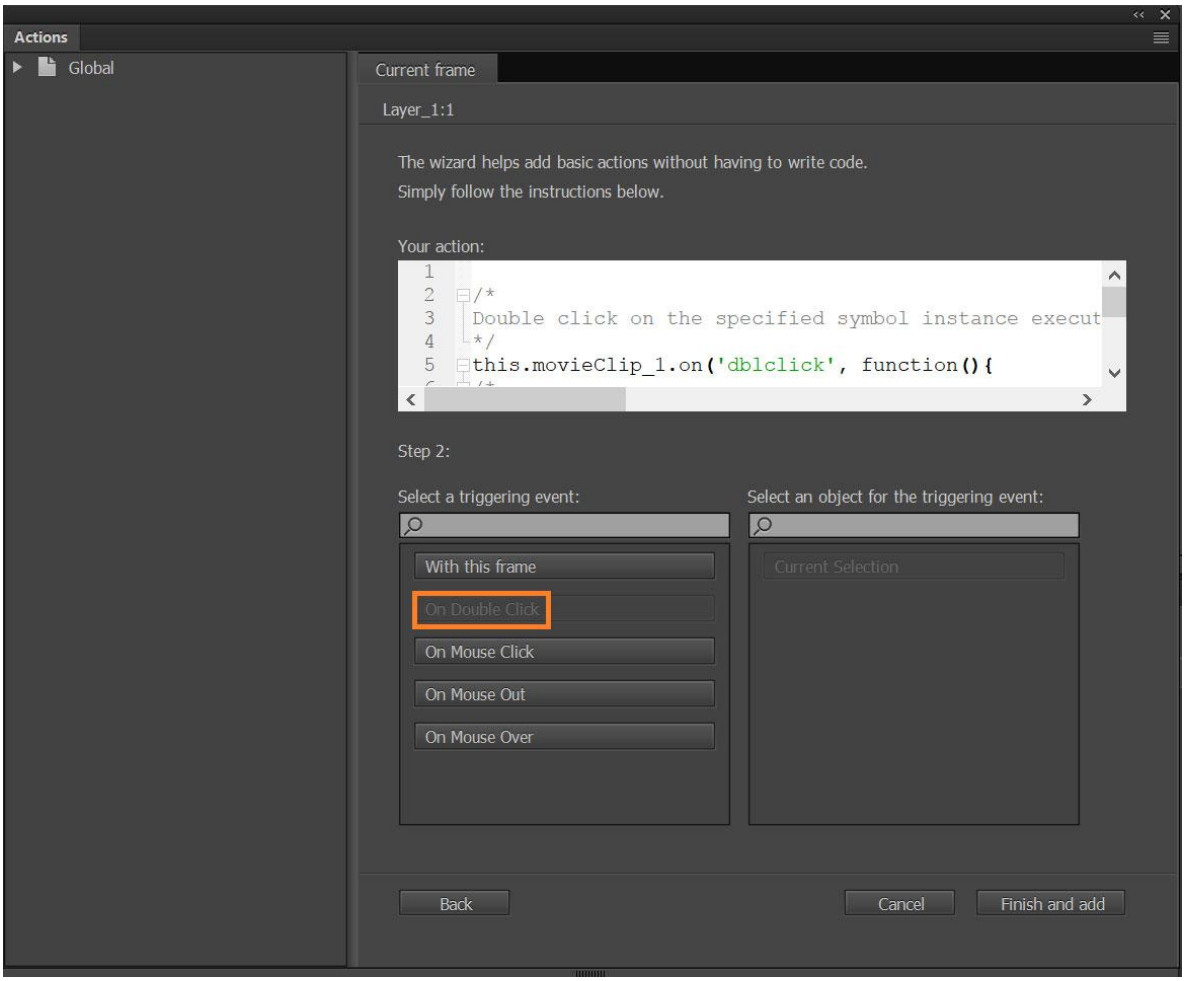
In the above screenshot, **Get frame number** action is selected and the corresponding code has been updated in action window.

Based on the action type you select, you can also choose the corresponding object for which you want to apply the action. You can search for specific objects on stage if the object has an instance name. Also, you can apply the action on the current selection.



List of objects on which to apply action

4 Click **Next** to choose a triggering event. A set of trigger events are listed in the window based on your action type and object type selection in previous steps.



List of triggering events

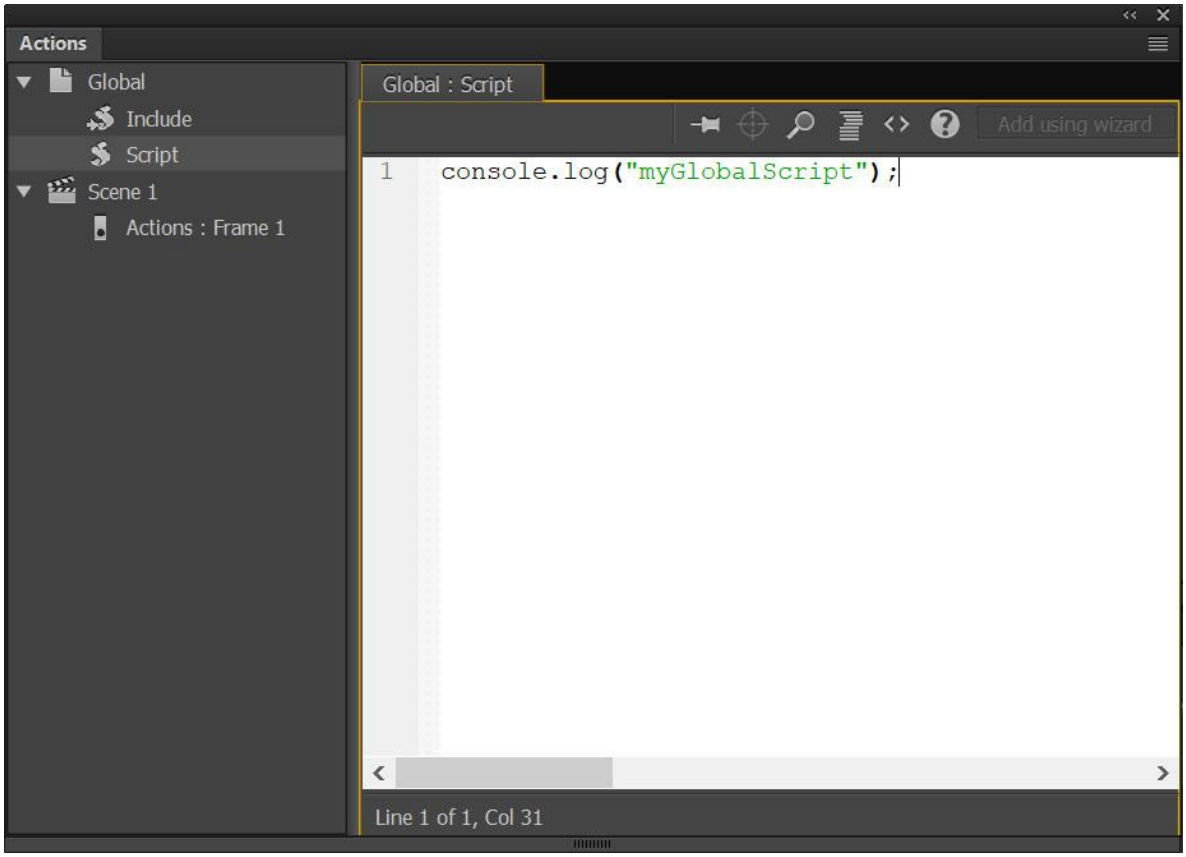
5 Choose an appropriate trigger event followed by its corresponding triggering objects, if any, and click **Finish and add** button.

You can choose the **Current Selection**option from the menu when you select an object in the stage and run the actions code wizard. You can also choose the timeline and components actions for the code.

Using script window

The Script window lets you create external script files that you import into your application. These scripts can be ActionScript or Animate JavaScript files.

You can also add Global and Third-party scripts in HTML5 canvas documents. For more information, see **Adding Global and Third-party scripts** section in Create and publish HTML5 Canvas documents in Animate CC



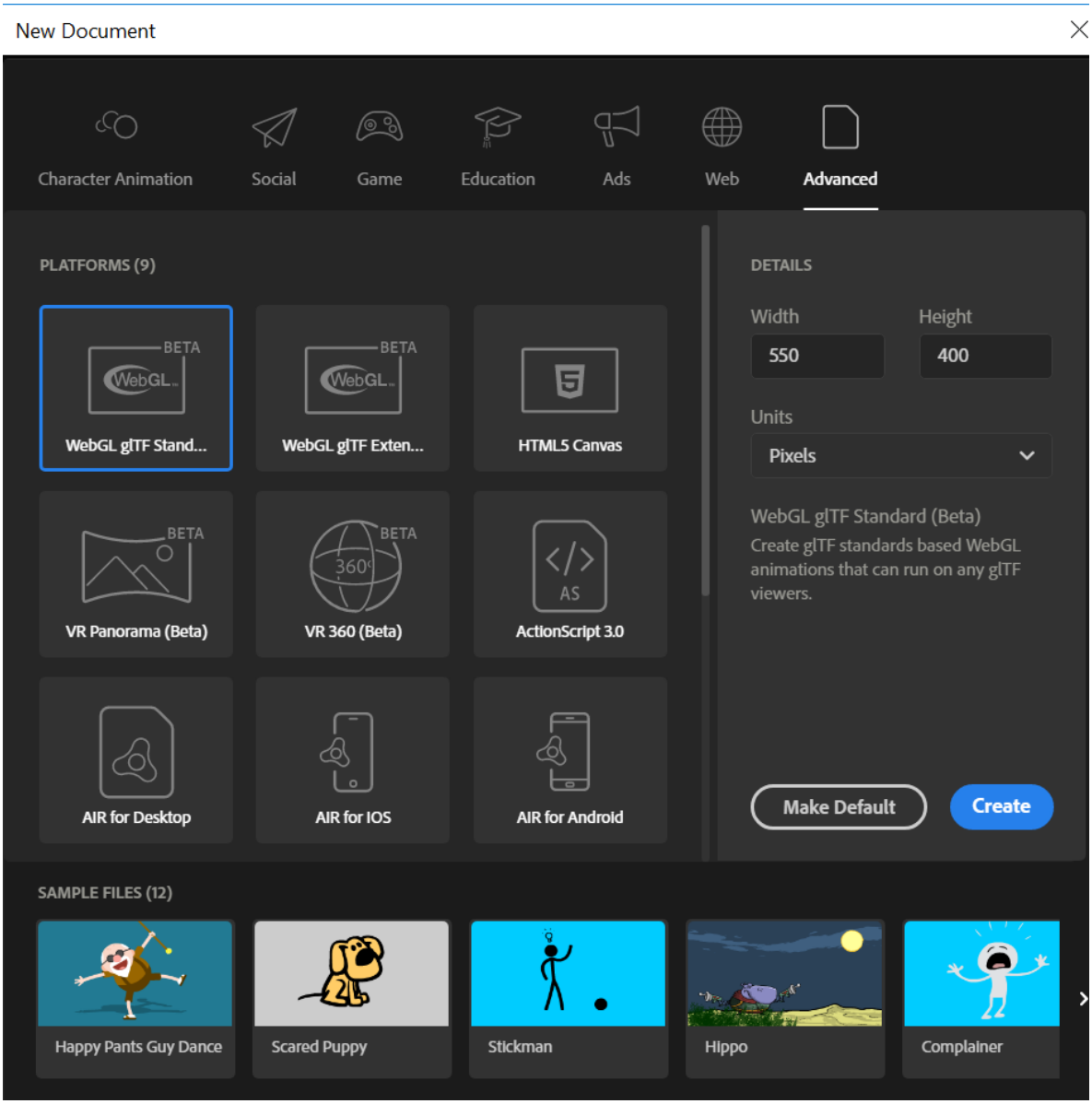
Script window

If you have more than one external file open, filenames are displayed on tabs across the top of the Script window.

In the Script window, you can use PinScript, find and replace, syntax coloring, format code, code hinting and commenting, and code collapse features. You can also use debug options (ActionScript files only), and word wrap. The Script window also lets you display line numbers and hidden characters.

Create an external file in the Script window

1 Select **File** > **New**.



New Document

2 Select the type of external file you want to create (ActionScript file or Animate JavaScript file).

Edit an existing file in the Script window

- To open an existing script, select **File > Open**, and then open an existing AS file.
- To edit a script that is already open, click the document tab that shows the script's name.

Tools in the Actions panel and script window

The Actions panel let you access the code-assistance features that simplify and streamline coding in ActionScript.

Find

Finds and replaces text in your script.

Insert Target Path

(Actions panel only) Helps you set an absolute or relative target path for an action in the script.

Help

Displays reference information for the ActionScript element that is selected in the Script pane. For example, if you click an *import* statement and then click **Help**, the reference information for *import* appears in the **Help** panel.

Code Snippets

Opens the **Code Snippets** panel that displays sample code snippets.

Add using wizard

Helps you to add code for actions using an interface without having to write code.

Accessing context-sensitive Help from the Actions panel

1. To select an item for reference, do any of the following:
   - Select an ActionScript term in the Actions panel toolbox pane (on the left side of the **Actions** panel).
   - Select an ActionScript term in the Actions panel in the Script pane.
   - Place the insertion point before an ActionScript term in the Actions panel in the Script pane.
2. To open the Help panel reference page for the selected item, do one of the following:
   - Press F1.
   - Right-click the item and select View Help.
   - Click Help above the Script pane.

Set ActionScript preferences

Whether you edit code in the Actions panel or the Script window, you can set and modify a single set of preferences.

1. Select **Edit > Preferences** (Windows) or **Animate > Preferences** (Macintosh), and then click **Code Editor** in the Category list.
2. Set any of these preferences:

   Automatic Indentation When automatic indentation is turned on, the text you type after an opening parenthesis "(" is automatically indented to the Tab Size setting. This behavior is also applicable when you use opening curly bracket "{".

   Tab Size Specifies the number of characters a new line is indented.

   Code Hints Enables code hinting in the Script pane.

   Delay Specifies the delay (in seconds) before code hints are displayed. The option is deprecated with Animate CC.

   Font Specifies the font used for your script.

Open/Import Specifies the character encoding used when you open or import ActionScript files.

Save/Export Specifies the character encoding used when you save or export ActionScript files.

Reload Modified Files Specifies what happens when a script file is modified, moved, or deleted. Select Always, Never, or Prompt.

Always No warning is displayed, and the file is automatically reloaded.

Never No warning is displayed, and the file remains in the current state.

Prompt (Default) A warning is displayed, and you can choose whether to reload the file.

When you build applications with external scripts, this preference enables you to avoid overwriting a script. Or avoid publishing the application with older versions of scripts. The warnings let you automatically close a script and reopen the newer, modified version.

Syntax Colors Specifies code coloring in your scripts.

ActionScript 3.0 Settings These buttons open the ActionScript Settings dialog boxes, where you can set source path, library path, and external library path for ActionScript 3.0.

Best practices - Accessibility guidelines

About accessibility guidelines

Screen readers are complex, and you can easily encounter unexpected results in FLA files developed for use with screen readers, which is software that visually impaired users run to read websites aloud. Text is read aloud using specially designed software. A screen reader can only interpret textual content. However, any descriptions that you provide for the overall SWF file, movie clips, images, or other graphical content are also read aloud. Write descriptions for the important images and animations so that the screen reader can also interpret these assets in your SWF file. This is the SWF file equivalent to alt text in an HTML web page.

note: Animate applications must be viewed in Internet Explorer on Windows, because Microsoft Active Accessibility (MSAA) support is limited to this browser.

Flash Player uses Microsoft Active Accessibility (MSAA) to expose Animate content to screen readers. MSAA is a Windows-based technology that provides a standardized platform for information exchange between assistive technologies, such as screen readers, and other applications. Events (such as a change in the application) and objects are visible to screen readers by using MSAA.

Note:

Flash Player 7 (and later) does not work with all screen-reader technologies. The third-party software provider must handle the information that MSAA provides.

Creating accessible sites

Making a website accessible involves several different criteria:

Expose the information to screen readers

Make text or images realizable Some visitors might have difficulty reading small text or seeing small graphics. Allow users to zoom in on these elements, taking advantage of scalable vector graphics in SWF files.

Provide audio narration Consider providing an audio narration for visitors without a screen reader, or where screen readers might not work, such as with video content.

Provide captions for audio narrations Some visitors might not be able to hear an audio narration for your site or a video. Consider providing captions for these visitors.

Do not rely on color to communicate information Many visitors might be color blind. If you rely on color to communicate information (such as: Click the green button to go to page 1, click the red button to go to page 2), provide text or speech equivalents.

Historically, many online presentations (such as videos) provide alternative ways for visually impaired visitors to access the content, for instance, a textual description of a video. However, Animate provides textual information directly to the screen reader. Although this usually means you need to make additional settings or ActionScript in a FLA file, you do not have to create a completely separate version.

Parts of your SWF file can be exposed to screen readers. Text elements (such as text fields, static text, and dynamic text), buttons, movie clips, components, and the entire SWF file can be interpreted by MSA-compliant screen readers.

Section 508 is United States legislation that provides guidelines for making information accessible to people with disabilities. Section 508 specifically addresses the need for websites to be accessible in several ways. Some websites, including all federal websites, must comply with these guidelines. If a SWF file does not communicate all of the information to the screen reader, the SWF file is no longer Section 508-compliant. For more information, see the Section 508 website.

Many nations have specified guidelines to follow to create accessible web sites, or follow guidelines established by other organizations. For more information on accessibility and web standards, see the World Wide Web Consortium (W3C) Web Accessibility Initiative website. These standards and guidelines describe what factors you must address when you create accessible HTML websites, and some of this information applies to Animate.

Exposing SWF file structure and navigation

Because of the visual nature of some SWF files, the layout and navigation of the page can be complex and difficult for screen readers to translate. An overall description of the SWF file is important to communicate information about its structure and how to navigate through the site's structure. You can provide this description by clicking the Stage and entering a description into the Accessibility panel. You can also create a separate area of the site to provide this description or overview.

Note:

If you enter a description for the main SWF file, this description is read each time the SWF file refreshes. You can avoid this redundancy by creating a separate informational page.

Inform the user about any navigational elements that change in the SWF file. Perhaps an extra button is added, or the text on the face of a button changes, and this change is read aloud by the screen reader. Flash Player 7 and later supports updating these properties by using ActionScript. You can update the accessibility information in your applications if the content changes at runtime.

Controlling descriptions and repetition

Designers and developers can assign descriptions for the animations, images, and graphics in a SWF file. Provide names for graphics so the screen reader can interpret them. If a graphic or animation does not communicate vital information to the SWF file (perhaps it is decorative or repetitive), or you outlined the element in the overall SWF file description, do not provide a separate description for that element. Providing unnecessary descriptions can be confusing to users who use screen readers.

Note:

If you divide text or use images for text in your SWF files, provide either a name or description for these elements.

If you have several nested movie clips that serve a single purpose or convey one idea, ensure that you do the following:

- Group these elements in your SWF file.
- Provide a description for the parent movie clip.
- Make all the child movie clips inaccessible.

  This is extremely important, or the screen reader tries to describe all the irrelevant nested movie clips, which will confuse the user, and might cause the user to leave your website. Make this decision whenever you have more than one object, such as many movie clips, in a SWF file. If the overall message is best conveyed using a single description, provide a description on one of the objects, and make all the other objects inaccessible to the screen reader.

  Looping SWF files and applications cause screen readers to constantly refresh because the screen reader detects new content on the page. Because the reader thinks the content is updated, it returns to the top of the web page and starts rereading the content. Make inaccessible to screen readers any looping or refreshing objects that do not have to be reread.

  ***note**: Do not type a description in the Description field of the Accessibility panel for instances (such as text) that the screen reader reads aloud.*

Using color

You must make decisions about using colors in an accessible file. You must not rely only on color to communicate particular information or directives to users. A color-blind user cannot operate a page if it asks to click on the blue area to launch a new page or the red area to hear music. Offer text equivalents on the page or in an alternate version to make your site accessible. Also, check that significant contrast exists between foreground and background colors to enhance readability. If you place light gray text on a white background, users cannot easily read it. Similarly, small text is difficult for many visitors to read. Using high-contrast and large or resizable text benefits most users, even those without impairments.

Ordering, tabbing, and the keyboard

Reading order and tabbing are important considerations for making accessible Animate websites. When you design an interface, the order that it appears on the page might not match the order in which the screen reader describes each instance. You can control and test reading order, as well as control tabbing in the SWF file.

Controlling reading order

The default reading order is not predictable and does not always match the placement of your assets or the visual layout of the page. Keeping the layout simple can help create a logical reading order without using ActionScript. However, you have more control over reading order if you use ActionScript and test the reading order in your SWF files.

Note:

Do not miss ordering a single instance in your SWF file, or the reading order reverts to the default (and unpredictable) reading order.

Controlling tabbing and content

Visitors who rely on screen readers to describe a site's content typically use tabbing and keyboard controls to navigate the operating system and web pages, because using the mouse is not useful when the screen cannot be seen. Use the *tabIndex* and *tabEnabled* properties with the movie clip, button, text field, or component instances to offer intelligent tabbing control in accessible SWF files. In addition to tabbing, you can use any key-press actions to navigate through the SWF file, but you must communicate that information using the Accessibility panel. Use the *Key* class in ActionScript to add key-press scripts to the SWF file. Select the object for which you want to use the key-press script, and add the shortcut key in the Shortcut field on the Accessibility panel. Add keyboard shortcuts to essential and frequently used buttons in your SWF file.***note**: In ActionScript 3.0, tabIndex and tabEnabled are properties of the InteractiveObject class. In ActionScript 2.0, they do not require a class reference.*

Note:

Avoid invisible buttons in accessible SWF files, because screen readers do not recognize these buttons. (Invisible buttons are buttons for which you define only a hit area, the clickable region, for the button.)

Many SWF files have a rapid succession of information, and screen readers frequently cannot keep up with this pace. Provide controls for the SWF file, letting the user use buttons to navigate through the file at their own pace, and letting them pause the process if necessary.

Handling audio, video, and animation

When you provide audio narrations or video that contains speech, provide captions for those users who cannot hear. You can use text fields in Animate, import video that contains captions, or even use an XML caption file. You can use video cue points to specify when a text field should update text information at runtime.

For information on using Hi-Caption SE and the Hi-Caption Viewer component, see the Adobe Add-ons page. This third-party extension lets you create captions that you save in an XML file and load into the SWF file at runtime, among other advanced controls. Alternatively, you can use cue points and a text field to display caption information.

Accessibility and extending Animate

With the extensibility layer in Animate, developers can create extensions that enable advanced authoring. This lets third-party companies develop extensions that involve accessibility. You have several options for validating your SWF files or adding captions.

For example, a validation tool can examine your SWF file for missing descriptions. It checks to see if a description is added for a group of instances, or if text has a label for the instance, and tells you about any problems. The tool also examines the reading order in your SWF file, and finds all instances that must be specified. You can specify reading order by using a dialog box after the SWF file is analyzed.

For information on the currently available third-party extensions, see the Adobe Add-ons page.

Testing files and making changes

Test any SWF file that is intended for use with screen readers. Test your SWF files when each new version of Flash Player is released, including minor revisions, and test it with the following scenarios:

- Using the Window Eyes and JAWS for Windows screen readers. These each handle SWF files differently, so you could get different results.
- In a browser without a screen reader, and navigate through your site without using the mouse.
- Turn off your monitor and use only the screen reader to navigate your website.
- If you use audio narration, test your site without speakers.

- With several users who are representative of your target web site visitors.

Note:

You do not have to test different browsers, because the technology used to expose SWF files to screen readers (MSAA) is supported only by Internet Explorer on Windows.

When listening to your SWF file using a screen reader, check the following points:

- Is the reading order correct?
- Do you have descriptions for shortcuts in your SWF file?
- Do you have adequate and complete descriptions for the elements in the interface?
- Do you have adequate descriptions for navigating the site's structure?
- Is the SWF file content read when it is updated or refreshed?
- If you change the context of any elements on the Stage (such as a button that changes from Play to Pause), is that change announced by the screen reader?

  No official tool is available for validating SWF files, unlike HTML validation. However, some third-party tools exist to help you validate the file. For more information on these extensions, see the Adobe Add-ons page.

Accessibility in the Animate workspace

The Adobe Animate CC (formerly Flash Professional CC) workspace is keyboard-accessible for users who may have difficulty using a mouse.

Note:

Complete, updated Help is on the web. The application did not detect an Internet connection. For a complete version of this topic, click the link below or search complete Animate CC Help.

The Adobe Animate \workspace is keyboard-accessible for users who may have difficulty using a mouse.

See the discussion of Animate workspace accessibility in Help on the web to learn about navigating the user interface without a mouse.

About accessibility support

Accessibility support in the authoring environment provides keyboard shortcuts for navigating and using interface controls, including panels, the Property inspector, dialog boxes, the Stage, and objects on the Stage, so that you can work with these interface elements without using the mouse.

Note:

Certain keyboard controls and authoring environment accessibility features are available only in Windows.

To customize the keyboard shortcuts for accessibility in the authoring environment, use the Workspace Accessibility Commands section of the Keyboard Shortcuts dialog box.

- To hide all panels and the Property inspector, press F4. To display all panels and the Property inspector, press F4 again.

Select controls in a panel using keyboard shortcuts

To move the focus through the panel controls when a panel or the Property inspector has the current focus, use the Tab key. To activate a menu that has the current focus, use the Spacebar (that is, pressing Spacebar is equivalent to clicking the menu in the panel). Animate does not support moving from panel to panel with the Tab key.

When you use the keyboard shortcut for panel controls, focus is applied to a control and the control is activated using the following criteria:

- To select a control in the panel with the Tab key, the panel with the current focus must be expanded. If the panel is collapsed, pressing Tab has no effect.
- To display the Panel menu items when the Panel menu has the focus, press the Space bar.
- You can move the focus to a panel control only if the control is active. If a control is dimmed (inactive), you cannot apply focus to the control.

Move the focus through the items in the Panel menu of a panel

1. To display the Panel menu items when the focus currently applied to the Panel menu, press the Spacebar.
2. To move through the items in the Panel menu, press Down Arrow.
3. To activate the currently selected Panel menu item, press Enter (Windows) or Return (Macintosh).

Move the focus through the controls in a panel

1. Press Tab when the focus is currently applied to the Panel menu. To move the focus through the controls in the panel, press Tab repeatedly.
2. To activate the currently selected menu in a panel , press Enter or Return.
3. To edit a numerical Hot Text value, type the number and press Enter or Return.

Navigate dialog box controls using keyboard shortcuts

- To move through the controls in the dialog box, press Tab.
- To move through the controls within one section of a dialog box, press Up Arrow and Down Arrow.
- To activate the button (equivalent to clicking the button), when the focus is applied to a dialog box control button, press Enter.
- To apply the current settings and close the dialog box (equivalent to clicking OK), when the focus is not applied to any dialog box control button, press Enter.
- To close the dialog box without applying the changes (equivalent to clicking Cancel), press Escape.
- To view the Help content for the dialog box (equivalent to clicking Help), when the focus is applied to the Help button, press Enter or Spacebar.

Select the Stage or objects on the Stage using keyboard shortcuts

Selecting the Stage with a keyboard shortcut is equivalent to clicking on the Stage.

After the Stage is selected, use the Tab key to navigate through all objects on all layers, one at a time. You can select instances (including graphic symbols, buttons, movie clips, bitmaps, videos, or sounds), groups, or boxes. You cannot select shapes (such as rectangles) unless those shapes are instances of symbols. You cannot select more than one object at a time using keyboard shortcuts.

To select objects on the Stage, use the following techniques:

- To select an object on the Stage, with the Stage selected, press Tab.
- To select the previous object when an object is currently selected, press Shift+Tab.
- To select the first object that was created on the active frame in the active layer, press Tab. When the last object on the top layer is selected, press Tab to move to the next layer beneath it and select the first object there, and so on.
- When the last object on the last layer is selected, press Tab to move to the next frame and select the first object on the top layer there.
- Objects on layers that are hidden or locked cannot be selected with the Tab key.

Note:

If you are currently typing text in a box, you cannot select an object using the keyboard focus. You must first press the Escape key and then select an object.

Navigate tree structures using keyboard shortcuts

To navigate tree structures, the hierarchical displays of file structures in certain Animate panels, use keyboard shortcuts.

- To expand a collapsed folder, select the folder and press Right Arrow.
- To collapse an expanded folder, select the folder and press Left Arrow.
- To move to the parent folder of an expanded folder, press Left Arrow.
- To move to the child folder of an expanded folder, press Right Arrow.

Work with library items using keyboard shortcuts

1. To copy or paste a selected library item, press Control+X (Windows) or Command+X (Macintosh) to cut the item, or press Control+C (Windows) or Command+C (Macintosh) to copy the item.
2. To paste a cut or copied item, click the Stage or in another library to set the insertion point, and press Control+V (Windows) or Command+V (Macintosh) to paste in the center of the Stage; or press Control+Shift+V (Windows) or Command+Shift+V (Macintosh) to paste in place (in the same location as the original).

   To cut, copy, and paste items, use the following techniques:

   - Cut or copy one item or multiple items.
   - Cut or copy an item from the Library panel and paste it onto the Stage or into another library, or paste a folder into another library.
   - You cannot paste a shape from the Stage into the library.
   - You cannot paste a library item into a common library, because common libraries cannot be modified. However, you can create a common library.
   - When you paste a library item onto the Stage, the item is centered.
   - If you paste a folder, each item in the folder is included.
   - To paste a library item into a folder in the destination library, click the folder before pasting.
   - You can paste a library item into a different location in the same library where it originated.

- If you attempt to paste a library item into a location containing another item by the same name, select whether to replace the existing item.

Writing and managing scripts

Format code

Your code can be formatted and indented automatically when typing. If you use dynamic font mapping, you ensure that the correct fonts are used for multilingual text.

Set Auto Format options

1 Do one of the following:

- From the panel menu (at the upper-right corner of the Actions panel), select Preferences.
- In the Script window, select Edit > Preferences (Windows) or Animate > Preferences (Macintosh).

2 In the Preferences dialog box, select Auto Format.

3 Select any of the Auto Format options.

After you set Auto Format options, your settings are applied automatically to the code you write, but not to existing code; you must apply your settings to existing code manually.

Format code according to Auto Format settings

- Click Auto Format in the Actions panel or Script window toolbar.
- From the panel menu (at the upper-right corner of the Actions panel), select Auto Format.
- Press Control+Shift+F (Windows) or Command+Shift+F (Macintosh).
- In the Script window, select Tools > Auto Format.

Use dynamic font mapping

? To turn dynamic font mapping on or off, select or deselect Use Dynamic Font Mapping in the Preferences dialog box.

Dynamic font mapping is turned off by default because it increases performance time when you are scripting. If you are working with multilingual text, turn on dynamic font mapping because it helps to ensure that the correct fonts are used.

Use automatic indentation

? To turn automatic indentation on or off, select or deselect Automatic Indentation in the Preferences dialog box.

When automatic indentation is turned on, the text you type after an opening parenthesis "(" or opening curly brace "{" is automatically indented according to the Tab Size setting in ActionScript preferences.

In your scripts, you can indent a line by selecting it and pressing Tab. To remove the indent, select the line and press Shift+Tab.

Comment sections of code

Code comments are parts of code that the ActionScript compiler ignores. A comment line explains what your code is doing, or temporarily deactivates code that you don't want to delete. Comment a line of code by beginning it with a double slash (//). The compiler ignores all text on that line after the double slash. You can also comment larger blocks of code by placing a slash and asterisk (/*) at the beginning of the block and an asterisk and slash (*/) at the end of the block.

You can type these comment markers manually, or you can use buttons at the top of the Actions panel or Script window to add them.

Comment a line of code

1. Place the insertion point at the beginning of the line or at the character where you want the comment to begin.
2. Right-click and select Comment. You can also use the keyboard shortcuts Ctrl + M (Windows) or Command + M or go to Edit > Comment Selection.

A double slash (//) is placed at the insertion point.

Comment multiple lines of code

1. Select the lines to comment. (The first and last lines of the selection can be partial lines.)
2. Right-click and select Comment. You can also use the keyboard shortcuts Ctrl + M (Windows) or Command + M or go to Edit > Comment Selection.

Block comment characters are placed at the beginning (/*) and end (*/) of the selection.

Note:

If there are comments in between the selected lines of text, a line comment will be applied on all selected lines.

Remove a comment

1. Place the insertion point in the line that contains the comment, or select the block of code that is commented.
2. Right-click and select Uncomment. You can also use the keyboard shortcuts Ctrl + Shift + M (Windows) or Command + Shift + M or go to Edit > Uncomment Selection.

Use syntax coloring

In ActionScript, as in any language, *syntax* is the way elements are put together to create meaning. If you use incorrect ActionScript syntax, your scripts cannot work.

To highlight syntax errors, set a color-code for parts of your scripts. For example, suppose you set the syntax coloring preference to make keywords appear in blue. When you type *var*, the word *var* appears in blue. However, if you mistakenly type *vae*, the word *vae* remains black, which shows that you made a typing error.

Do one of the following:

- Select Edit > Preferences (Windows) or Animate > Preferences (Macintosh), click Code Editor in the Category list, and specify Syntax Coloring settings.
- With the insertion point in the Script pane, press Control-U (Windows) or Command-U (Macintosh).

Note:

When you write scripts in the Actions panel, commands that are not supported by the version of the player you are targeting appear in yellow in the Actions toolbox. For example, if the Flash Player SWF file version is set to Flash 7, ActionScript that only Flash Player 8 supports appears in yellow in the Actions toolbox.

Using the identifier and keyword list at runtime

On launching Animate, the identifier and keyword lists are read from the resource file and cached. Apart from reading the default lists from the resource, it also scans for additional keywords and identifier list in the Preference folder. It is possible for you to add additional keywords and identifiers by adding ".txt files" in following folders:

- C:\Users\<Username>[AppData]\Roaming\Adobe\Animate\13.0[ActionscriptKeywords]\
- C:\Users\<UserName>[AppData]\Roaming\Adobe\Animate\13.0[ActionscriptIdentifiers]\
- C:\Users\<UserName>[AppData]\Roaming\Adobe\Animate\13.0[JavascriptKeywords]\
- C:\Users\<UserName>[AppData]\Roaming\Adobe\Animate\13.0[JavascriptIdentifiers]\

Use line numbers and word wrap

When you edit or modify code, line numbers make code easier to scroll and parse. Word wrap helps you avoid horizontally scrolling long lines of code (especially when you work in the authoring environment, or at low screen resolutions).

Enable or disable line numbers

- In the Script window, select View > Line Numbers.
- Press Control+Shift+L (Windows) or Command+Shift+L (Macintosh).

Highlight a specific line

- In the Script window, select Edit > Go To Line.

Enable or disable line word wrap

- In the Script window, select View > Word Wrap.
- Press Control+Shift+W (Windows) or Command+Shift+W (Macintosh).

Display hidden characters

Characters such as spaces, tabs, and line breaks are hidden in ActionScript code. You may need to display these characters; for example, you must find and remove double-byte spaces that are not part of a string value, because they cause compiler errors.

- Press Control+Shift+8 (Windows) or Command+Shift+8 (Macintosh).

The following symbols are used to display hidden characters.

Hidden character	Symbol
Single-byte space	.
Double-byte space	I
Tab	>>
line break	¶

Find text in a script

The Find tool lets you find and replace text strings in your scripts.

Note:

To search through text in every script in a Animate document, use the Movie Explorer.

Find text

1. In the Actions panel or Script window, click Find or press Control+F (Windows) or Command+F (Macintosh).
2. Enter the search string.
3. Click Find Next.

Find and replace text in a script

1. In the Actions panel or Script window, click Find or press Control+F (Windows) or Command+F (Macintosh).
2. Enter the search string.
3. In the Replace box, enter the new string.
4. Click Find Next.
5. To replace the string, click Replace; to replace all occurrences of the string, click Replace All.

(Deprecated with Animate CC) Repeat a search in the Actions panel

? From the panel menu (at the upper-right corner of the Actions panel), select Find Again.

(Deprecated with Animate CC) Repeat a search in the Script window

? Select Edit > Find Again.

(Deprecated with Animate CC) Check syntax and punctuation

You can do a quick check of your ActionScript code without publishing the FLA file.

When you check syntax, the current script is checked. If the current script calls ActionScript classes, those classes are also checked. Other scripts that might be in the FLA file are not checked.

For ActionScript 2.0 files, Check Syntax runs the code through the compiler, generating syntax and compiler errors.

For ActionScript 3.0 files, Check Syntax generates only syntax errors. To generate compiler errors, such as type mismatches, improper return values, and variable or method name misspellings, you must use the Control > Test command.

Check syntax

To check syntax, do one of the following:

- In the Actions panel or Script window, click Check Syntax .
- Click in the Script pane, and then press Control+T (Windows) or Command+T (Macintosh). Clicking or typing in the Script pane gives it the focus. If an object on the Stage has the focus, the Transform panel opens instead.

Syntax errors are listed in the Compiler Errors panel.

Note:

In an external ActionScript class file in the Script window, the global classpath (AS2) or source path (AS3) affects the syntax check. Even if the global classpath or source path is set correctly, you might generate errors, because the compiler is not aware that this class is being compiled.

Check for punctuation balance

1. Click between braces {}, brackets [], or parentheses () in your script.
2. In Windows, press Control+' (single quote); on the Macintosh, press Command+' (single quote). The text between braces, brackets, or parentheses is highlighted, and you can check that opening punctuation has corresponding closing punctuation.

(Deprecated with Animate CC) Import and export scripts

You can import a script into the Actions panel or Script window. You can also export your scripts from the Actions panel to external ActionScript files. (When you use the Script window, exporting is unnecessary because you can instead save the AS file.)

If text in your scripts doesn't look as expected when you open or import a file, change the import encoding preference.

Import an external AS file

1. In the Script pane, place the insertion point where you want to locate the first line of the external script.
2. Do one of the following:
   - In the Actions panel, select Import Script from the panel menu, or press Control+Shift+I (Windows) or Command+Shift+I (Macintosh).
   - In the Script window, select File > Import Script or press Control+Shift+I (Windows) or Command+Shift+I (Macintosh).

Export a script from the Actions panel

1. Select the script to export. Then select Export Script from the Actions Panel menu, or press Control+Shift+X (Windows) or Command+Shift+X (Macintosh).
2. Save the ActionScript (AS) file.

Set text encoding options

1. Select Edit > Preferences (Windows) or Animate > Preferences (Macintosh), and select ActionScript in the Category list.
2. Set any of these options:

   Open/Import Select UTF-8 Encoding to open or import using Unicode encoding, or select Default Encoding to open or import using the encoding form of the language currently used by your system.

   Save/Export Select UTF-8 Encoding to save or export using Unicode encoding, or select Default Encoding to save or export using the encoding form of the language currently used by your system.

Turn the export encoding warning off or on

1. Select Edit > Preferences (Windows) or Animate > Preferences (Macintosh), and select Warnings in the Category list.
2. Select or deselect Warn On Encoding Conflicts When Exporting ActionScript Files.

(Deprecated with Animate CC) Encoding for imported and exported scripts

You can set ActionScript preferences to specify the type of encoding to use in imported or exported ActionScript files. UTF-8 Encoding is 8-bit Unicode format, which lets you include text in multiple languages in your file; Default Encoding is the encoding supported by the language your system is currently using, also called the *traditional code page*.

Note:

When you use a non-English application on an English system, the Test Movie command fails if any part of the SWF file path has characters that cannot be represented by using the Multibyte Character Sets (MBCS) encoding scheme. For example, Japanese paths, which work on a Japanese system, won't work on an English system. Be sure to use English-only path names on English systems. All areas of the application that use the Test Movie player are subject to this limitation.

Pin scripts in the Actions panel

Use the Pin Script feature to pin tabs of individual scripts in the Script pane and move them accordingly. This feature is useful if you have not organized the code within your FLA file into one central location or if you are using multiple scripts.

You can pin a script to retain the open location of the code in the Actions panel and toggle between the various open scripts. This can be especially useful when debugging.

You can also unpin a script or unpin all scripts to unpin a selected script or unpin all scripts from the Actions panel.

In the following figure, the script associated with the current location on the timeline is on Frame 1 of the layer named Cleanup. (The tab at the far left always follows your location along the timeline.) The script is also pinned as shown as the rightmost tab. The following two scripts are pinned:

- On Frame 1
- On Frame 15 of the layer named Intro

Use keyboard shortcuts or click the tabs to move among the pinned scripts. Moving among the various pinned scripts does not change your current position on the timeline. If a new script is selected in Action script navigator, focus moves to the first frame ie Frame 1.

If the content in the Script pane does not change to reflect the location you select on the timeline, the Script pane is probably showing a pinned script. Click the current frame tab at the top left of the Script pane to show the script associated with your location along the timeline.

A pinned script

Pin a script

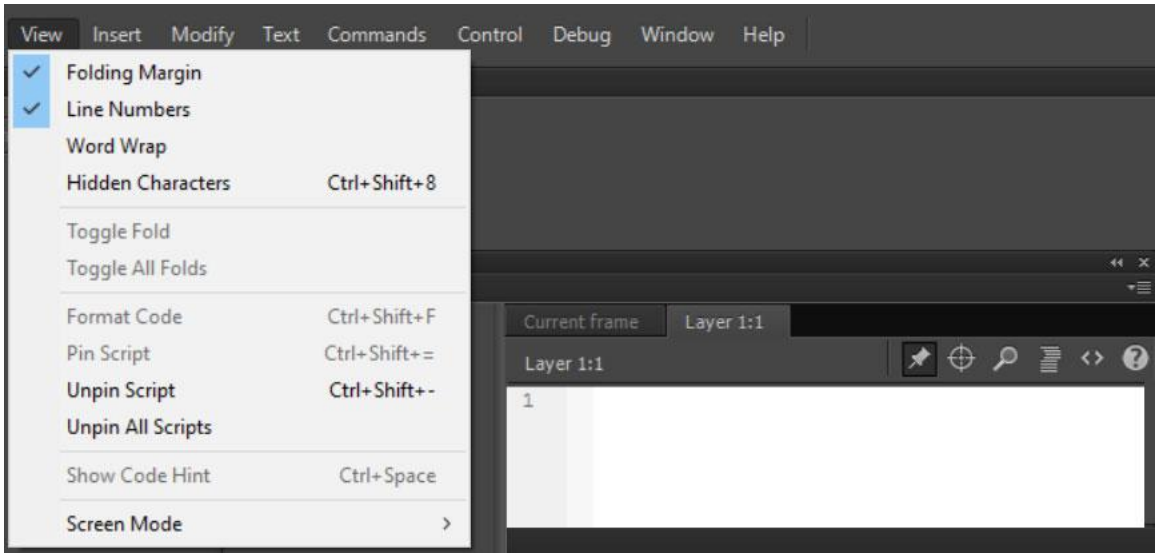
1. Click the **Timeline** for the script to appear in the current frame tab at top left of the **Script** pane in the **Actions** panel.
2. Do one of the following:
   - Click the Pushpin icon to the right of the tab.
   - Select **View> Pin Script** to pin the script.

Unpin all scripts

1 Select the pinned script in the Actions panel.

2 Select **View> Unpin Script** to unpin the selected script from the Actions panel.

3 Select **View> Unpin All Scripts** to unpin all the scripts from the Actions panel.



Unpin Options

Keyboard shortcuts for pinned scripts

When the insertion point is in the Script pane, use the following keyboard shortcuts to work with pinned scripts.

Action	Windows	Macintosh
Pin script	Control+Shift+= (equal sign)	Command+Shift+=
Unpin script	Control+Shift+- (minus sign)	Command+Shift+-

Insert target paths

Many script actions are meant to affect movie clips, buttons, and other symbol instances. In your code, you can reference symbol instances on a timeline by inserting a *target path*—the address of the instance you want to target. You can set either an absolute or relative target path. An absolute path contains the entire address of the instance. A relative path contains only the part of the address that is different from the address of the script itself in the FLA file, and will no longer work if the script is moved to another location.

1 In the Actions panel, click an action in your script.

2 Click Target Path .

3 Enter the path to the target instance, or select the target from the list.

4 Select either the Absolute or Relative path option.

Use code hints

When you work in the Actions panel or Script window, the software can detect what action you are entering and display a *code hint.* There are two types of code hint: a tooltip that contains the complete syntax for that action, and a pop-up menu that lists possible ActionScript elements, such as method or property names (sometimes referred to as a form of *code completion*).

Code hints are enabled by default. By setting preferences, you can disable code hints or determine how quickly they appear. When code hints are disabled in preferences, you can still manually display a code hint for a specific command.

Note:

If you cannot display code hints for a variable or object you created in ActionScript 2.0, but code hints are enabled in ActionScript preferences, make sure you named your variable or object with the proper suffix or that you used strict typing for your variable or object.

Enabling code hinting

You can trigger code hints in various ways.

Strict typing for objects

When you use ActionScript 2.0 and use strict typing for a variable that is based on a built-in class (such as Button, Array, and so on), the Script pane displays code hints for the variable. For example, suppose you enter the following two lines of code:

```
var foo:Array = new Array();
foo.
```

As soon as you enter the period (.), Animate displays a list of methods and properties available for Array objects in a pop-up menu, because you typed the variable as an array.

Suffixes and code hints

If you use ActionScript 1.0 or you want to display code hints for objects without strictly typing them, add a suffix to the name of each object when you create it. For example, the suffix that triggers code hinting for the Camera class is *_cam*. Suppose you type the following code: *var my_array = new Array(); var my_cam = Camera.get();*

If you then enter *my_cam* followed by a period, code hints for the Camera object appear.

For objects that appear on the Stage, use the suffix in the Instance Name box in the Property inspector. For example, to display code hints for MovieClip objects, use the Property inspector to assign instance names with the *_mc* suffix to all MovieClip objects. Then, whenever you type the instance name followed by a period, code hints appear.

```
var my_array = new Array();
var my_cam = Camera.get();
```

Although suffixes are not required for triggering code hints when you use strict typing for an object, using suffixes consistently helps make your code understandable.

The following table lists the suffixes that trigger code hints in ActionScript 2.0:

Object type	Variable suffix
Array	_array
Button	_btn
Camera	_cam
Color	_color
ContextMenu	_cm
ContextMenuItem	_cmi
Date	_date
Error	_err
LoadVars	_lv
LocalConnection	_lc
Microphone	_mic
MovieClip	_mc
MovieClipLoader	_mcl
PrintJob	_pj
NetConnection	_nc
NetStream	_ns
SharedObject	_so
Sound	_sound
String	_str
TextField	_txt
TextFormat	_fmt
Video	_video
XML	_xml
XMLNode	_xmlnode
XMLSocket	_xmlsocket

Comments and code hints

You can also use ActionScript comments to specify an object's class for code hints. In the following example, a comment tells ActionScript that the class of the *theObject* instance is Object, and so on.

```
// Object theObject;// Array theArray;// MovieClip theMC;
```

If you subsequently enter *theMC* followed by a period, code hints that display the list of MovieClip methods and properties appear. If you enter *theArray* followed by a period, code hints that display the list of Array methods and properties appear, and so on.

Instead of this technique, however, Adobe recommends that you use strict data typing or suffixes, because these techniques enable code hints automatically and make your code more understandable.

Specify preference settings for automatic code hints

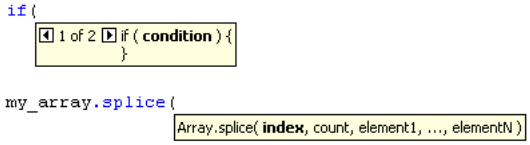
- In the Actions panel or Script window, select Edit > Preferences (Windows) or Animate > Preferences (Macintosh), click Code Editor in the Category list, and then enable or disable Code Hints.

(Deprecated with Animate CC) Specify a delay for code hints

1. In the Actions panel or Script window, select Edit > Preferences (Windows) or Animate > Preferences (Macintosh).
2. Click ActionScript in the Category list.
3. Use the slider to select an amount of delay, in seconds.

Use tooltip-style code hints

1. Display the code hint by typing an opening parenthesis "(" after an element that requires parentheses (for example, after a method name, a command such as *if* or *do..while*, and so on).

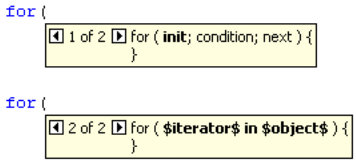


Opening parentheses invoke the code hints

2. Enter a value for the parameter.

   For multiple parameters, separate the values with commas. For functions or statements, such as the *for* loop, separate the parameters with semicolons.

   Overloaded commands (functions or methods that can be invoked with different sets of parameters) such as *gotoAndPlay()* or *for* display an indicator that lets you select the parameter you want to set. To select the parameter, click the small arrows or press Control+Left Arrow and Control+Right Arrow.

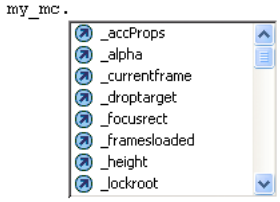


A code hint with multiple sets of parameters

3. To dismiss the code hint, do one of the following:
   - Type a closing parenthesis ")".
   - Click outside the statement.
   - Press Escape.

Use menu-style code hints:

1. Display the code hint by typing a period after a variable or object name.



Menu-style code hints

2 To navigate through the code hints, use the Up and Down Arrow keys.

3 To select an item in the menu, press Enter or Tab, or double-click the item.

4 To dismiss the code hint, do one of the following:

- Select one of the menu items.
- Click above or below the menu window.
- Type a closing parenthesis ")" if you've already typed an opening parenthesis "(".
- Press Escape.

Manually display a code hint

1 Click in a code location where code hints can appear, such as in the following locations:

- After the dot (.) following a statement or command, where a property or method must be entered
- Between parentheses [()] in a method name

2 Do one of the following:

- To enable Code Hinting manually, select View > Show Code Hint.
- Press Control+Spacebar (Windows) or Command+Spacebar (Macintosh).

Code hinting for custom classes

When you create custom ActionScript 3.0 classes, Animate parses the classes and determines the objects, properties, and methods included in them. Animate can then provide code hinting when you write code that refers to the custom classes. Custom class code completion is automatic for any class that you link to any other code with the *import* command.

Code hinting allows developers to work faster because they don't have to remember all the objects, methods, and properties used by the class. Designers can work with classes they did not write themselves because they don't have to have first hand knowledge of how to work with the class.

Code hinting includes the following:

- Code hinting for nested class references

  When you write nested references, the continued assistance of code hints is helpful.

- Code hinting for "this"

  When you type "this" in a class file, you get code hints for that same class.

- Code hinting for "new+<space>"

  When you type "new+<space>", Animate displays a list of available classes and packages.

- Code hinting for "import"

When you type “import + <space>”, Animate displays a list of all the built-in packages and custom packages.

- Code hinting for SWC libraries

  When you add a SWC library to the library path or the external library path, Animate enables code hinting for all the classes included in the SWC file.

Enabling Support for Custom Platforms

This article guides the plug-in developers on how to create Animate plug-ins to support custom platforms using Animate CC.

To build a custom platform support plug-in, developers require the Custom Platform Support Development Kit. Click here to download.

1. Choose Animate Custom Platform SDK in **Downloads** tab
2. Select **CC 2019** SDK version
3. Select **Cross Platform**, and
4. Select **v1 (Latest)** option to download.

Click here to download a sample plug-in and use it as a reference for building a custom support platform support plug-in.

1. Choose **Animate Custom Platform SDK** in **Downloads** tab.
2. Select **CC 2019** SDK version
3. Select **Sample Plug-in**

A plug-in consists of the following elements:

- DocType adds a new document type for the custom platform in Animate and controls the authoring features.
- Publisher allows configuration of the publish settings and publishing the document to the custom platform.

For an overview of the Custom Platform Support feature, see Custom Platform Support.

Building a Animate custom platform support plug-in

You can develop a custom platform support plug-in using one of the following methods:

- Create a plug-in using the APIs in the custom platform support development kit.
- Customize the settings of the sample plug-in included in the development kit to suit your requirements.

Custom Platform Support plug-ins are packaged as .zxp files that can be installed with Animate CC. You can host the plug-in on the Adobe Add-ons page for users to download and install using the Creative Cloud application or distribute the plug-ins as .zxp packages to install them using the Manage Extensions utility.

Software requirements

A developer needs the following software to build a plug-in using the custom platform support development kit:

- Microsoft Windows 7 or Apple Mac OS 10.8 and later
- Microsoft Visual Studio 2012 (for Windows) or XCode 4.5.2 (for Mac)

- Animate CC
- Eclipse IDE for C/C++ Developers
- Adobe Extension Builder 3.0
- Manage Extensions utility

API reference documentation for plug-in developers

The custom platform support development kit contains the following elements:

- FCM (Flash Component Model): The header files contained in the development kit define a framework called FCM, which is responsible for plug-in management.
- DocType: This contains a set of interfaces that helps you to add a new document type to the Animate start page and allows you to enable or disable features for the custom document type.
- DOM (Document Object Model): This contains a set of interfaces that helps you to access the contents of the animate document in the form of a DOM.
- Publisher: This contains a set of interfaces that provides hooks to the publish workflows.

For complete information about the APIs in the custom platform support and examples of how to use them to build your plug-in, see Custom Platform Support API Reference.

Creating a custom platform support plug-in

You can create a custom platform support plug-in as follows:

1. Download the **Custom Platform Support Development Kit**.
2. Extract the contents of the kit to your computer.
3. Open a new project in VisualStudio or Xcode and include the header files in the development kit to your software development project. To quick-start the creation of your custom platform support plug-in, you can use the following sample plug-in available under the SampleCreateJSPlatform directory as the base code for your plug-in project.

   For example, the SampleCreateJS plug-in files are at SampleCreateJSPlatform\Plugin\SampleCreateJS\project\
4. Make necessary changes for your target platform.
5. Compile the code to generate a plug-in (.dll or .plug-in).

Packaging the custom platform support plug-in

You can generate a distributable package of the custom platform support plug-in as follows:

1. Open the sample Eclipse file or in the Eclipse New Project wizard, create a new Application Extension Project. Provide a name for the project, then click Next.
2. On the New Adobe Application Extension Project panel, choose Adobe Animate as the target application and click Next.
3. Change the extensions of the plug-in files that you had created from *.dll* to *.fcm* on Windows and from .plug-in to .fcm.plug-in on Mac and add the plug-in files to the project (*ExtensionContent/plugins/lib/win* for Windows and *ExtensionContent/plugins/lib/mac* for MAC).
4. Configure your extension by modifying the manifest.xml. To open the manifest file, right-click on the extension in project explorer and select Adobe Extension Builder 3 > Bundle Manifest Editor and select the manifest tab in Bundle Manifest Editor present at *EclipseProject\\.staged-extension\\CSXS*.

5 To enable editing the *manifest.xml*, right-click inside the window and select Open with > XML editor. The two tags that you must concentrate on are: *ExtensionList* and *DispatchInfoList*:

A typical *ExtensionList* tag looks as below:

```
<ExtensionList>
       <Extension Id="PluginID" Version="1.0" />
       <Extension Id="PublishSettingsID" Version-"1.0" />
</ExtensionList>
```

This tag contains the list of extensions in the final ZXP package in which each extension has a unique string as its ID. In this case, the .dll or .plugin file created in the previous section is included in an extension. Then, the other extension is used for configuring the Publish Settings UI of the Publisher. In the sample, *ExtensionList* tag the extension with the extension ID *PluginID* contains the .dll/.plugin file and the extension with the ID *PublishSettingsID* configures the publish pettings UI of the publisher.

? The *DispatchInfoList* tag contains details about each extension mentioned in the *ExtensionList*. The following is an example of *DispatchInfoList*:

```
<DispatchInfoList>
           <Extension Id="PluginID">
                   <DispatchInfo >
                           <Resources>
                           <MainPath>./plugin/fcm.xml</MainPath>
                           </Resources>
                           <Lifecycle>
                           <AutoVisible>true</AutoVisible>
                           </Lifecycle>
                           <UI>
                               <Type>ModalDialog</Type>
                               <Menu>CreateJS</Menu>
                               <Geometry>
                                    <Size>
                                          <Height>200</Height>
                                          <Width>200</Width>
                                    </Size>
                                </Geometry>
                            </UI>
                   </DispatchInfo>
       </Extension>
       <Extension Id="PublishSettingsID">
```

```
                    <DispatchInfo >
                            <Resources>
                            <MainPath>./index.html</MainPath>
                            </Resources>
                            <Lifecycle>
                                    <AutoVisible>true</AutoVisible>
                            </Lifecycle>
                            <UI>
                                    <Type>ModalDialog</Type>
                                    <Menu>Publish Settings</Menu>
                                    <Geometry>
                                         <Size>
                                                <Height>170</Height>
                                                 <Width>486</Width>
                                          </Size>
                                    </Geometry>
                            </UI>
                    </DispatchInfo>
          </Extension>
</DispatchInfoList>
```

6 For the extension containing the .dll or the .plugin file, you can ignore all the tags except the *MainPath* tag. The MainPath tag contains path to the file *fcm.xml* relative to the ExtensionContent folder. You must rename the .dll file to .fcm and placed inside the *win* folder beside the *fcm.xml*. Similarly, if you are working on the Mac environment, rename the .plugin file to .fcm.plugin and place it inside the *mac* folder beside the *fcm.xml*.

7 The HTML extension to configure the publish settings user interface is an HTML extension to Animate. To know more about HTML extensions to Animate, see Creating HTML Extensions.

8 Ensure that the lower value of the version attribute in the *Host* tag is *15.1*, the minimum (internal) version of Animate CC with Custom Platform Support.

```
<ExecutionEnvironment>
<HostList>
<Host Name="FLPR" Version="15.1" />
</HostList>.
.
.
</ExecutionEnvironment>
```

9 Switch to the Script Explorer view, right-click on your project and choose Export > Adobe Extension Builder 3 > Application Extension. The Export Wizard appears.

10 You must have a certificate to sign the extension package. Browse to an existing certificate or click Create to create a new certificate.

11 Click Finish to compile the project. Eclipse generates a plug-in file with .zxp extension, which you can host on the Adobe Add-ons site.

Distributing your custom platform support plug-in

You can distribute the custom platform support plug-in by hosting it on the Adobe Add-ons page and monetize it. Your plug-in package goes through an Adobe review and approval process before it is listed on the page. You can host a plug-in as follows:

1. Log in to the Adobe Add-ons page using your Adobe user ID and password.
2. On the left panel, under Become a producer, click the link Go to the producer portal.
3. Click the Sign-up button if you are not signed up as a producer.
4. For detailed instructions on how to sign up as a producer and host your plug-ins, see Getting Started with the Producer Portal.
5. Complete the following steps in the producer portal workflow as documented in the Getting Started page:
    1. Package your product in a single file.
    2. Enter information about the product and upload the file.
    3. Add marketing assets.
    4. Preview your product.
    5. Submit your product for approval.
6. After approval, your plug-in is listed under the Animate product category on the Add-ons page.

Note:

- If you are a user who wants to install a plug-in, create a custom platform document, and publish it using Animate, see Working with Custom Platform Support Plug-in.
- For complete information about managing Adobe extensions, see Downloading and Installing Extensions.

Feature requests and bug reporting

Fill the following form if you want to send any questions, concerns, product bugs, or feature requests to the Animate product team:

Adobe Feature Requests and Bug Report Form

Enabling Support for Custom Platforms

This article guides the plug-in developers on how to create Animate plug-ins to support custom platforms using Animate CC 2014.2. If you are using Animate CC 2014.1 (October 2014 update), see the Enabling Support for Custom Platforms.

To build a custom platform support plug-in, developers must download the Custom Platform Support Development Kit from the following location:

Download a sample plug-in from the following location and use it as a reference for building a custom support platform support plug-in:

A plug-in consists of the following elements:

- DocType adds a new document type for the custom platform in Animate and controls the authoring features.
- Publisher allows configuration of the publish settings and publishing the document to the custom platform.

For an overview of the Custom Platform Support feature, see Custom Platform Support.

New in Animate CC 2015:

- **Ability to query the type of a library symbol**: In case of symbols, ILibraryItem::GetProperties() will have an additional entry with the key as kLibProp_SymbolType_DictKey. The value of key can be kLibProp_SymbolType_Button, kLibProp_SymbolType_MovieClip, or kLibProp_SymbolType_Graphic.
- **Ability to distinguish between button and MovieClip**: Until the previous release, the button instances were treated as MovieClips by both the DOM and the IFrameCommandGenerator service. Starting with Animate CC 2015, an interface has been added to support button instances. If the IMovieClip instance also implements the IButton interface, then it is treated as a button instance. The four states of a button namely, Up, Over, Down, and Hit are always mapped to the frames 0, 1, 2, and 3 respectively. See the file IButton.h to know more about the button instance.
- **New API to get the bounds of IClassicText objects**: The AddClassicText function in ITimelineBuilder interface now returns an object of CLASSIC_TEXT_INFO_2 (instead of the old CLASSIC_TEXT_INFO), which contains a new field "bounds" representing the bounds of the IClassicText object.
- The sample plug-in has been modified to reuse the bitmaps used for shape fills.
- Mongoose web server has been integrated to the sample plug-in.

Note: The new IK bone tool available in Animate CC 2015 release is disabled in Custom Platform document types. Animate converts the IK content to frame-by-frame animation when you paste it into a custom platform document.

February 2015 update: Support for “masks” in *IFrameCommandGenerator* service--This release supports masks in the *IFrameCommandGenerator* service. The new interface *ITimelineBuilder2* that is inherited from the existing *ITimelineBuilder* interface contains the functions that the plugin has to implement to make this feature work. See the Custom Platform Support API documentation to know more about the new *ITimelineBuilder2* interface.

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You can develop a custom platform support plug-in using one of the following methods:

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A developer needs the following software to build a plug-in using the custom platform support development kit:

- Microsoft Windows 7 or Apple Mac OS 10.8 and later
- Microsoft Visual Studio 2012 (for Windows) or XCode 4.5.2 (for Mac)
- Animate CC 2014.1 and above
- Eclipse IDE for C/C++ Developers
- Adobe Extension Builder 3.0

- Adobe Extension Manager 7.2.1.6

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The custom platform support development kit contains the following elements:

- FCM (Flash Component Model): The header files contained in the development kit define a framework called FCM, which is responsible for plug-in management.
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   For example, the SampleCreateJS plug-in files are at SampleCreateJSPlatform\Plugin\SampleCreateJS\project\
4. Make necessary changes for your target platform.
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2. On the New Adobe Application Extension Project panel, choose Adobe Animate as the target application and click Next.
3. Change the extensions of the plug-in files that you had created from *.dll* to *.fcm* on Windows and from .plug-in to .fcm.plug-in on Mac and add the plug-in files to the project (*ExtensionContent/plugins/lib/win* for Windows and *ExtensionContent/plugins/lib/mac* for MAC).
4. Configure your extension by modifying the manifest.xml. To open the manifest file, right-click on the extension in project explorer and select Adobe Extension Builder 3 > Bundle Manifest Editor and select the manifest tab in Bundle Manifest Editor present at *EclipseProject**.staged-extension**CSXS*.
5. To enable editing the *manifest.xml*, right-click inside the window and select Open with > XML editor. The two tags that you must concentrate on are: *ExtensionList* and *DispatchInfoList*:

   A typical *ExtensionList* tag looks as below:

```
<ExtensionList>
       <Extension Id="PluginID" Version="1.0" />
       <Extension Id="PublishSettingsID" Version-"1.0" />
</ExtensionList>
```

This tag contains the list of extensions in the final ZXP package in which each extension has a unique string as its ID. In this case, the .dll or .plugin file created in the previous section is included in an extension. Then, the other extension is used for configuring the Publish Settings UI of the Publisher. In the sample, *ExtensionList* tag the extension with the extension ID *PluginID* contains the .dll/.plugin file and the extension with the ID *PublishSettingsID* configures the publish pettings UI of the publisher.

? The *DispatchInfoList* tag contains details about each extension mentioned in the *ExtensionList*. The following is an example of *DispatchInfoList*:

```
<DispatchInfoList>
           <Extension Id="PluginID">
                   <DispatchInfo >
                           <Resources>
                           <MainPath>./plugin/fcm.xml</MainPath>
                           </Resources>
                           <Lifecycle>
                           <AutoVisible>true</AutoVisible>
                           </Lifecycle>
                           <UI>
                               <Type>ModalDialog</Type>
                               <Menu>CreateJS</Menu>
                               <Geometry>
                                    <Size>
                                          <Height>200</Height>
                                          <Width>200</Width>
                                    </Size>
                                </Geometry>
                            </UI>
                   </DispatchInfo>
       </Extension>
       <Extension Id="PublishSettingsID">
```

```
                    <DispatchInfo >
                            <Resources>
                            <MainPath>./index.html</MainPath>
                            </Resources>
                            <Lifecycle>
                                    <AutoVisible>true</AutoVisible>
                            </Lifecycle>
                            <UI>
                                    <Type>ModalDialog</Type>
                                    <Menu>Publish Settings</Menu>
                                    <Geometry>
                                         <Size>
                                                <Height>170</Height>
                                                 <Width>486</Width>
                                          </Size>
                                    </Geometry>
                            </UI>
                    </DispatchInfo>
          </Extension>
</DispatchInfoList>
```

6 For the extension containing the .dll or the .plugin file, you can ignore all the tags except the *MainPath* tag. The MainPath tag contains path to the file *fcm.xml* relative to the ExtensionContent folder. You must rename the .dll file to .fcm and placed inside the *win* folder beside the *fcm.xml*. Similarly, if you are working on the Mac environment, rename the .plugin file to .fcm.plugin and place it inside the *mac* folder beside the *fcm.xml*.

7 The HTML extension to configure the publish settings user interface is an HTML extension to Animate. To know more about HTML extensions to Animate, see Creating HTML Extensions.

8 Ensure that the lower value of the version attribute in the *Host* tag is *14.1*, the minimum (internal) version of Animate CC with Custom Platform Support.

```
<ExecutionEnvironment>
<HostList>
<Host Name="FLPR" Version="15.0" />
</HostList>.
.
.
</ExecutionEnvironment>
```

9 Switch to the Script Explorer view, right-click on your project and choose Export > Adobe Extension Builder 3 > Application Extension. The Export Wizard appears.

10 You must have a certificate to sign the extension package. Browse to an existing certificate or click Create to create a new certificate.

11 Click Finish to compile the project. Eclipse generates a plug-in file with .zxp extension, which you can host on the Adobe Add-ons site.

Distributing your custom platform support plug-in

You can distribute the custom platform support plug-in by hosting it on the Adobe Add-ons page and monetize it. Your plug-in package goes through an Adobe review and approval process before it is listed on the page. You can host a plug-in as follows:

1. Log in to the Adobe Add-ons page using your Adobe user ID and password.
2. On the left panel, under Become a producer, click the link Go to the producer portal.
3. Click the Sign-up button if you are not signed up as a producer.
4. For detailed instructions on how to sign up as a producer and host your plug-ins, see Getting Started with the Producer Portal.
5. Complete the following steps in the producer portal workflow as documented in the Getting Started page:
    1. Package your product in a single file.
    2. Enter information about the product and upload the file.
    3. Add marketing assets.
    4. Preview your product.
    5. Submit your product for approval.
6. After approval, your plug-in is listed under the Animate product category on the Add-ons page.

Note:

- If you are a user who wants to install a plug-in, create a custom platform document, and publish it using Animate, see Working with Custom Platform Support Plug-in.
- For complete information about managing Adobe extensions, see Downloading and Installing Extensions.

Feature requests and bug reporting

Fill the following form if you want to send any questions, concerns, product bugs, or feature requests to the Animate product team:

Adobe Feature Requests and Bug Report Form

Custom Platform Support API Reference

The Custom Platform Support development kit includes a set of header files, sample plugins, and project files that you can use for building a plugin for Animate.

Animate provides a uniform way to integrate various publishers and document types in the Animate authoring environment. Publishers and document types developed by third-party developers can be plugged into Animate "document creation" and "publish/test movie" workflows using the pre-defined C++ interfaces.

The APIs or the C++ header files contained in the development kit define the Document Object Model (DOM) and Flash Component Model (FCM), which you can use to build a custom platform support plugin.

Detailed API reference documentation is available at the following location:

Custom Platform Support API Reference

Creating accessible content

About accessible content

Accessibility overview

You can create content that is accessible to all users, including those with disabilities, using the accessibility features that Adobe Animate provides in the authoring environment user interface, taking advantage of ActionScript® designed to implement accessibility. As you design accessible Animate applications, consider how users might interact with the content and follow recommended design and development practices.

Worldwide accessibility standards

Many countries have adopted accessibility standards based on the standards developed by the World Wide Web Consortium (W3C). The W3C publishes the *Web Content Accessibility Guidelines*, a document that prioritizes actions designers should take to make web content accessible. For information about the Web Accessibility Initiative, see the W3C website at w3.org.

In the United States, the law that governs accessibility is commonly known as Section 508, which is an amendment to the U.S. Rehabilitation Act.

For additional information about Section 508, see the following websites:

- The US government-sponsored website at section508.gov
- The Adobe accessibility site at www.adobe.com/accessibility/

Understanding screen reader technology

Screen readers are software applications that visually impaired users can use to navigate a website and read the web content aloud. To enable a screen reader to read nontextual objects in your application, such as vector art and animations, use the Accessibility panel to associate a name and description with the object. The keyboard shortcuts you define can allow users to use the screen reader to navigate through your document with ease.

To expose graphic objects, use the Accessibility panel or ActionScript to provide a description.

You cannot control how any screen reader behaves; you can control only the content, which you can mark up in your Animate applications to expose the text and ensure that screen reader users can activate the controls. You decide which objects in the Animate application are exposed to screen readers, provide descriptions for them, and decide the order in which they are exposed to screen readers. You cannot force screen readers to read specific text at specific times or control the manner in which that content is read. Test your applications with a variety of screen readers to ensure that they perform as you expect.

Sound is the most important medium for most screen reader users. Consider how any sound in your document interacts with the text spoken aloud by screen readers. It might be difficult for screen reader users to hear what their screen readers are saying if your Animate application contains loud sounds.

Platform requirements

You can only create Animate content designed for use with screen readers with Windows platforms. Viewers of Animate content must have Macromedia Flash® Player 6 from Adobe or later and Internet Explorer on Windows 98 or later.

Animate and Microsoft Active Accessibility (Windows only)

Flash Player is optimized for Microsoft Active Accessibility (MSAA), which provides a descriptive and standardized way for applications and screen readers to communicate. MSAA is available only for Windows operating systems. For more information on Microsoft Accessibility Technology, visit the Microsoft Accessibility website at www.microsoft.com/enable/default.aspx.

The Windows ActiveX (Internet Explorer plug-in) version of Flash Player 6 supports MSAA, but Windows Netscape and Windows stand-alone players do not.

Note:

MSAA is currently not supported in the opaque windowless and transparent windowless modes. (These modes are options in the HTML Publish Settings panel, available for use with the Windows version of Internet Explorer 4.0 or later, with the Animate ActiveX control.) To make your Animate content accessible to screen readers, avoid using these modes.

Flash Player makes information about the following types of accessibility objects available to screen readers that use MSAA.

Dynamic or static text The principal property of a text object is its name. To comply with MSAA conventions, the name is equal to the contents of the text string. A text object can also have an associated description string. Animate uses the static or dynamic text immediately above or to the left of an input text field as a label for that field.

note: Any text that is a label is not passed to a screen reader, but is used as the name of the object that it labels. Labels are never assigned to buttons or text fields that have author-supplied names.

Input text fields Have a value, an optional name, a description string, and a keyboard shortcut string. An input text object's name can come from a text object that is above or to the left of it.

Buttons Have a state (pressed or not pressed), support a programmatic default action that causes the button to depress momentarily, and optionally have a name, a description string, and a keyboard-shortcut string. Animate uses any text entirely inside a button as a label for that button.

note: For accessibility purposes, Flash Player considers movie clips used as buttons with button event handlers such as *onPress* to be buttons, not movie clips.

Components Provide special accessibility implementation.

Movie clips Exposed to screen readers as graphic objects when they do not contain any other accessible objects, or when you use the Accessibility panel to provide a name or a description for a movie clip. When a movie clip contains other accessible objects, the clip itself is ignored, and the objects inside it are made available to screen readers.

note: All Animate Video objects are treated as simple movie clips.

Basic accessibility support in Flash Player

By default, the following objects are defined as accessible in all Animate documents and are included in the information that Flash Player provides to screen reader software. This generic support for documents that do not use any accessibility features includes the following:

Dynamic or static text Text is transferred to the screen reader program as a name, but with no description.

Input text fields Text is transferred to the screen reader. No names are transferred, except where a labeling relationship is found for the input text, such as a static text field positioned close to the input text field. No descriptions or keyboard shortcut strings are transferred.

Buttons The state of the button is transferred to the screen reader. No names are transferred, except where labeling relationships are found, and no descriptions or keyboard shortcut strings are transferred.

Documents The document state is transferred to the screen reader, but with no name or description.

Accessibility for hearing-impaired users

Include captions for audio content that is integral to comprehending the material. A video of a speech, for example, might require captions for accessibility, but a quick sound associated with a button probably wouldn't.

Methods to add captions to a Animate document include the following:

- Add text as captions, ensuring that the captions are synchronized with the audio in the Timeline.
- Use Hi-Caption Viewer, a component available from Hi Software that works with Hi-Caption SE for use with Animate. Captioning Macromedia Animate Movies with Hi-Caption SE, a white paper, explains how to use Hi-Caption SE and Animate together to create a captioned document.

Provide animation accessibility for the visually impaired

You can change the property of an accessible object during SWF file playback. For example, to indicate changes that take place on a keyframe in an animation. However, different vendor's screen readers treat new objects on frames differently. Some screen readers might read only the new object, whereas other screen readers might re-read the entire document.

To reduce the chance of causing a screen reader to emit extra "chatter" that can annoy users, avoid animating the text, buttons, and input text fields in your document. Also, avoid making your content loop.

Flash Player can't determine the actual text content of features such as Text Break Apart to animate text. Screen readers can only provide accurate accessibility to information-carrying graphics such as icons and gestural animation, if you provide names and descriptions for these objects in your document or for the entire Animate application. You can also add supplementary text to your document or shift important content from graphics to text.

1. Select the object for which you want to change the accessibility properties.
2. Select Window > Other Panels > Accessibility.
3. Change the properties for the object.

   Alternatively, use ActionScript to update accessibility properties.

Testing accessible content

When you test your accessible Animate applications, follow these recommendations:

- Download several screen readers and test your application by playing it in a browser with the screen reader enabled. Check that the screen reader is not attempting to "talk over" places in your document where you inserted separate audio. Several screen reader applications provide a demonstration version of the software as a free download; test as many screen readers as you can to ensure compatibility across screen readers.
- Test interactive content and verify that users can navigate your content effectively using only the keyboard. Different screen readers work in different ways when processing input from the keyboard; your Animate content might not receive keystrokes as you intended. Test all keyboard shortcuts.

Using Animate to enter accessibility information for screen readers

Animate for screen readers and accessibility

Screen readers read aloud a description of the content, read text, and assist users as they navigate through the user interfaces of traditional applications such as menus, toolbars, dialog boxes, and input text fields.

By default, the following objects are defined as accessible in all Animate documents and are included in the information that Flash Player provides to screen reader software:

- Dynamic text
- Input text fields
- Buttons
- Movie clips
- Entire Animate applications

  Flash Player automatically provides names for static and dynamic text objects, which are the contents of the text. For each of these accessible objects, you can set descriptive properties for screen readers to read aloud. You can also control how Flash Player decides which objects to expose to screen readers—for example, you can specify that certain accessible objects are not exposed to screen readers at all.

The Animate Accessibility panel

The Animate Accessibility panel (Window > Other Panels > Accessibility) lets you provide accessibility information to screen readers and set accessibility options for individual Animate objects or entire Animate applications.

Note:

Alternatively, use ActionScript code to enter accessibility information.

If you select an object on the Stage, you can make that object accessible and specify options and tab order for the object. For movie clips, you can specify whether child object information is passed to the screen reader (the default when you make an object accessible).

With no objects selected on the Stage, use the Accessibility panel to assign accessibility options for an entire Animate application. You can make the entire application accessible, make child objects accessible, have Animate label objects automatically, and give specific names and descriptions to objects.

All objects in Animate documents must have instance names for you to apply accessibility options to them. Create instance names for objects in the Property inspector. The instance name is used to refer to the object in ActionScript.

The following options are available in the Accessibility panel:

Make Object Accessible (Default) Instructs Flash Player to pass the accessibility information for an object to a screen reader. When the option is disabled, accessibility information for the object is not passed to screen readers. Disabling this option as you test content for accessibility can be useful because some objects might be extraneous or decorative and making them accessible could produce confusing results in the Screen Reader. You can then apply a name manually to the labeled object, and hide the labeling text by deselecting Make Object Accessible. When Make Object Accessible is disabled, all other controls on the Accessibility panel are disabled.

Make Child Objects Accessible (Movie clips only; Default) Instructs Flash Player to pass child object information to the screen reader. Disabling this option for a movie clip causes that movie clip to appear as a simple clip in the accessible object tree, even if the clip contains text, buttons, and other objects. All objects in the movie clip are then hidden from the object tree. This option is useful mainly for hiding extraneous objects from screen readers.

***note**: If a movie clip is used as a button—it has a button event handler assigned to it, such as onPress or onRelease—the Make Child Objects Accessible option is ignored because buttons are always treated as simple clips, and their children are never examined, except in the case of labels.*

Auto Label Instructs Animate to automatically label objects on the Stage with the text associated with them.

Name Specifies the object name. Screen readers identify objects by reading these names aloud. When accessible objects don't have specified names, a screen reader might read a generic word, such as *Button*, which can be confusing.

***Note**: Do not confuse object names specified in the Accessibility panel with instance names specified in the Property inspector. Giving an object a name in the Accessibility panel does not give it an instance name.*

Description Lets you enter a description of the object to the screen reader. The screen reader reads this description.

Shortcut Describes keyboard shortcuts to the user. The screen reader reads the text in this text field. Entering keyboard shortcut text here does not create a keyboard shortcut for the selected object. You must provide ActionScript keyboard handlers to create shortcut keys.

Tab Index (only) Creates a tab order in which objects are accessed when the user presses the tab key. The tab index feature works for keyboard navigation through a page, but not for screen reader reading order.

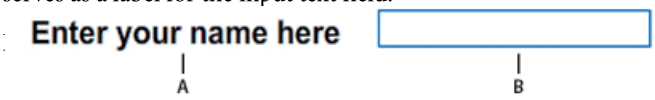
Selecting names for buttons, text fields, and entire SWF applications

Use the Accessibility panel in the following ways to assign names to buttons and input text fields so that the screen reader identifies them appropriately:

- Use the auto label feature to assign text adjacent or in the object as a label.
- Enter a specific label in the Accessibility panel name field.

  Animate automatically applies the name that you place on top of, in, or near a button or text field as a text label. Labels for buttons must appear within the bounding shape of the button. For the button in the following example, most screen readers would first read the word button, then read the text label Home. The user can press Return or Enter to activate the button.

  A form might include an input text field where users enter their names. A static text field, with the text Name appears next to the input text field. When Flash Player discovers such an arrangement, it assumes that the static text object serves as a label for the input text field.

  creen reader reads “Enter your name here.”

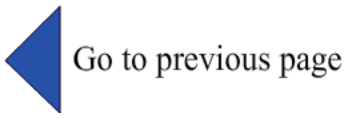
  In the Accessibility panel, turn off automatic labeling if it is not appropriate for your document. You can also turn off automatic labeling for specific objects in your document.

Provide a name for an object

You can turn off automatic labeling for part of an application and provide names for the objects in the Accessibility panel. If you have automatic labeling turned on, you can select specific objects and provide names for the objects in the Name text field in the Accessibility panel so that the name is used instead of the object text label.

When a button or input text field doesn't have a text label, or when the label is in a location that Flash Player can't detect, you can specify a name for the button or text field. You can also specify a name if the text label is near a button or text field, but you don't want that text to be used as that object's name.

In the following example, the text that describes the button appears outside and to the right of the button. In this location, Flash Player does not detect the text, and the screen reader does not read it.



To correct this situation, open the Accessibility panel, select the button, and enter the name and description. To prevent repetition, make the text object inaccessible.

Note:

An object's accessibility name is unrelated to the ActionScript instance name or ActionScript variable name associated with the object. (This information generally applies to all objects.) For information on how ActionScript handles instance names and variable names in text fields, see About text field instance and variable names in Learning ActionScript 2.0 in Adobe Animate at www.adobe.com/go/learn_cs5_learningas2_en.

Specify a name and description for a button, text field, or entire SWF application

1. Do one of the following:
   - To provide a name for a button or text field, select the object on the Stage.
   - To provide a name for an entire Animate application, deselect all objects on the Stage.
2. Select Window > Other Panels > Accessibility.
3. Select either Make Object Accessible (for buttons or text fields) or the default, Make Movie Accessible (for entire Animate applications).
4. Enter a name and description for the button, text field, or Animate application.

Define accessibility for a selected object in a SWF application

1. Select Window > Other Panels > Accessibility.
2. Do one of the following:
   - Select Make Object Accessible (the default setting) to expose the object to screen readers and to enable other options in the panel.
   - Deselect Make Object Accessible to hide the object from screen readers and disable the other options in the panel.
3. Enter a name and a description for the selected object as needed:

   Dynamic text To provide a description for static text, you must convert it to dynamic text.

   Input text fields or buttons Enter a keyboard shortcut.

   Movie clips Select Make Child Objects Accessible to expose the objects inside the movie clip to screen readers.

   ***note**: If you can describe your application in a simple phrase that a screen reader can easily convey, turn off Make Children Accessible, and type a suitable description.*

Make an entire SWF application accessible

After a Animate document is complete and ready to be published or exported, make the entire Animate application accessible.

1. Deselect all elements in the document.
2. Select Window > Other Panels > Accessibility.
3. Select Make Movie Accessible (the default setting) to expose the document to screen readers.
4. Select or deselect Make Children Accessible to expose or omit any accessible objects in the document to screen readers.
5. If you selected Make Movie Accessible in step 2, enter a name and description for the document as needed.

6 Select Auto Label (the default setting) to use text objects as automatic labels for accessible buttons or input text fields contained in the document. Deselect this option to turn off automatic labeling and expose text objects to screen readers as text objects.

Viewing and creating tab order and reading order

The two aspects to tab indexing order are the *tab order* in which a user navigates through the web content and the order in which things are read by the screen reader, called the *reading order*.

Flash Player uses a tab index order from left to right and top to bottom. Customize both the tab and reading order by using the *tabIndex* property in ActionScript (in ActionScript, the *tabIndex* property is synonymous with the reading order).

Note:

Flash Player no longer requires that you add all of the objects in a FLA file to a list of tab index values. Even if you do not specify a tab index for all objects, a screen reader reads each object correctly.

Tab order The order in which objects receive input focus when users press the Tab key. Use ActionScript to create the tab order, or if you have Adobe Animate, use the Accessibility panel. The tab index that you assign in the Accessibility panel does not necessarily control the reading order.

Reading order The order in which a screen reader reads information about the object. To create a reading order, use ActionScript to assign a tab index to every instance. Create a tab-order index for every accessible object, not just the focusable objects. For example, dynamic text must have tab indexes, even though a user cannot tab to dynamic text. If you do not create a tab index for every accessible object in a given frame, Flash Player ignores all tab indexes for that frame whenever a screen reader is present, and uses the default tab ordering instead.

Create a tab-order index for keyboard navigation in the Accessibility panel

You can create a custom tab-order index in the Accessibility panel for keyboard navigation for the following objects:

- Dynamic text
- Input text
- Buttons
- Movie clips, including compiled movie clips
- Components
- Screens

  note: You can also use ActionScript code to create a tab-order index for keyboard navigation.

  Tab focus occurs in numerical order, starting from the lowest index number. After tab focus reaches the highest tab index, focus returns to the lowest index number.

  When you move tab-indexed objects that are user-defined in your document, or to another document, Animate retains the index attributes. Check for and resolve index conflicts (for example, two different objects on the Stage with the same tab-index number).

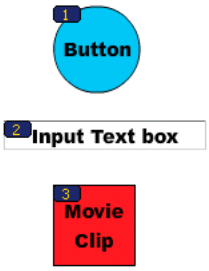
  Note: If two or more objects have the same tab index in any given frame, Animate follows the order in which the objects were placed on the Stage.

1 Select the object in which to assign a tab order.

2 Select Window > Other Panels > Accessibility.

3 If you're providing an index for the selected object only, in the Tab Index text field, enter a positive integer (up to 65535) that reflects the order in which the selected object should receive focus.

4 To view a tab order, select View > Show Tab Order. Tab index numbers for individual objects appear in the upper-left corner of the object.



Tab index numbers

Note:

Tab indexes created with ActionScript code do not appear on the Stage when the Show Tab Order option is enabled.

Specifying advanced accessibility options for screen readers

Turn off automatic labeling and specify an object name for screen readers

1 On the Stage, select the button or input text field for which you want to control labeling.

2 Select Window > Other Panels > Accessibility.

3 Select Make Object Accessible (the default setting).

4 Enter a name for the object. The name is read as the label for the button or text field.

5 To turn off accessibility for the automatic label (and hide it from screen readers), select the text object on the Stage.

6 If the text object is static text, convert it to dynamic text (in the Property inspector, select Text type > Dynamic Text).

7 Deselect Make Object Accessible.

Hide an object from the screen reader

You can hide a selected object from screen readers, and you can decide to hide accessible objects that are contained inside a movie clip or Animate application and expose only the movie clip or Animate application to screen readers.

note: Only hide objects that are repetitive or convey no content.

When an object is hidden, the screen reader ignores the object.

1 On the Stage, select the button or input text field to hide from the screen reader.

2 Select Window > Other Panels > Accessibility.

3 In the Accessibility panel, do one of the following:

- If the object is a movie clip, button, text field, or another object, deselect Make Object Accessible.

- If the object is the child of a movie clip, deselect Make Child Objects Accessible.

Create a keyboard shortcut to an object for screen readers

You can create a keyboard shortcut for an object, such as a button, so users can navigate to it without listening to the contents of an entire page. For example, you can create a keyboard shortcut to a menu, a toolbar, the next page, or a submit button.

To create a keyboard shortcut, write ActionScript code for an object. If you provide a keyboard shortcut for an input text field or button, you must also use the ActionScript Key class to detect the key the user presses during Animate content playback. See Key in the ActionScript 2.0 Language Reference. See Capturing keypresses in Learning ActionScript 2.0 in Adobe Animate at www.adobe.com/go/learn_cs5_learningas2_en.

Select the object and add the name of the keyboard shortcut to the Accessibility panel so the screen reader can read it.

Test your Animate content with multiple screen readers. Keyboard shortcut functionality also depends on the screen reader software used. The key combination Control+F, for example, is a reserved keystroke for both the browser and the screen reader. The screen reader reserves the arrow keys. Generally, you can use the 0 to 9 keys on the keyboard for keyboard shortcuts, however, screen readers increasingly use even these keys.

Create a keyboard shortcut

1. On the Stage, select the button or input text field to create a keyboard shortcut for.
2. Select Window > Other Panels > Accessibility.
3. In the Shortcut field, type the name of the keyboard shortcut, using the following conventions:
   - Spell out key names, such as Control or Alt.
   - Use capital letters for alphabetic characters.
   - Use a plus sign (+) between key names, with no spaces (for example, Control+A).

Note:

Animate does not check that the ActionScript to code the keyboard shortcut was created.

Map a keyboard shortcut to a button instance Control+7 to myButton instance

1. Select the object on the Stage, display the Accessibility panel, and in the Shortcut field, type the key combination of the shortcut. For example, *Control+7*.
2. Enter the following ActionScript 2.0 code in the Actions panel:

   Note:

   In this example the shortcut is Control+7.

```
function myOnPress() {
   trace( "hello" );
}
function myOnKeyDown() {
   if (Key.isDown(Key.CONTROL) && Key.getCode() == 55) // 55 is key code for 7
   {
       Selection.setFocus(myButton);
       myButton.onPress();
   }
}
var myListener = new Object();
myListener.onKeyDown = myOnKeyDown;
Key.addListener(myListener);
myButton.onPress = myOnPress;
myButton._accProps.shortcut = "Ctrl+7"
Accessibility.updateProperties();
```

Note:

The example assigns the Control+7 keyboard shortcut to a button with an instance name of myButton and makes information about the shortcut available to screen readers. In this example, when you press Control+7, the myOnPress function displays the text "hello" in the Output panel. See addListener (IME.addListener method) in ActionScript 2.0 Language Reference at www.adobe.com/go/learn_cs5_as2lr_en.

Creating accessibility with ActionScript

About ActionScript and accessibility

You can create accessible documents with ActionScript® code. For accessibility properties that apply to the entire document, you can create or modify a global variable called *_accProps*. See the *_accProps* property in *ActionScript 2.0 Language Reference* at www.adobe.com/go/learn_cs5_as2lr_en.

For properties that apply to a specific object, you can use the syntax *instancename._accProps*. The value of *_accProps* is an object that can include any of the following properties:

Property	Type	Equivalent selection in the Accessibility panel	Applies to
.silent	Boolean	Make Movie Accessible/Make Object Accessible (inverse logic)	Entire documents Buttons Movie clips Dynamic text Input text
.forceSimple	Boolean	Make Child Objects Accessible (inverse logic)	Entire documents Movie clips

Property	Type	Equivalent selection in the Accessibility panel	Applies to
.name	string	Name	Entire documents Buttons Movie clips Input text
.description	string	Description	Entire documents Buttons Movie clips Dynamic text Input text
.shortcut	string	Shortcut	Buttons Movie clips Input text

Note:

With inverse logic, a value of true in ActionScript corresponds to a check box that is not selected in the Accessibility panel, and a value of false in ActionScript corresponds to a selected check box in the Accessibility panel.

Modifying the *_accProps* variable has no effect by itself. You must also use the *Accessibility.updateProperties* method to inform screen reader users of Animate content changes. Calling the method causes Flash Player to re-examine all accessibility properties, update property descriptions for the screen reader, and, if necessary, send events to the screen reader that indicate changes have occurred.

When updating accessibility properties of multiple objects at once, include only a single call to *Accessiblity.updateProperties* (too frequent updates to the screen reader can cause some screen readers to become too verbose).

See the *Accessibility.updateProperties* method in the ActionScript 2.0 Language Reference at www.adobe.com/go/learn_cs5_as2lr_en.

Implementing screen reader detection with the Accessibility.isActive() method

To create Animate content that behaves in a specific way if a screen reader is active, use the *Accessibility.isActive()* ActionScript method, which returns a value of *true* if a screen reader is present, and *false* otherwise. You can then design your Animate content to perform so that it's compatible with screen reader use (for example, by hiding child elements from the screen reader). For more information, see the *Accessibility.isActive* method in the ActionScript 2.0 Language Reference at www.adobe.com/go/learn_cs5_as2lr_en.

For example, you could use the *Accessibility.isActive()* method to decide whether to include unsolicited animation. Unsolicited animation happens without the screen reader doing anything, which can be confusing for screen readers.

The *Accessibility.isActive()* method provides asynchronous communication between the Animate content and Flash Player; a slight real-time delay can occur between the time the method is called and the time when Flash Player becomes active, returning an incorrect value of *false*. To ensure that the method is called correctly, do one of the following:

- Instead of using the *Accessibility.isActive()* method when the Animate content first plays, call the method whenever you need to make a decision about accessibility.

- Introduce a short delay of one or two seconds at the beginning of your document to give the Animate content enough time to contact Flash Player.

  For example, you can use an *onFocus* event to attach this method to a button. This approach generally gives the SWF file enough time to load and you can assume a screen reader user will tab to the first button or object on the Stage.

Use ActionScript to create a tab order for accessible objects

To create the tab order with ActionScript® code, assign the *tabIndex* property to the following objects:

- Dynamic text
- Input text
- Buttons
- Movie clips, including compiled movie clips
- Timeline frames
- Screens

Provide a complete tab order for all accessible objects. If you create a tab order for a frame and you don't specify a tab order for an accessible object in the frame, Flash Player ignores all the custom tab-order assignments. Additionally, all objects assigned to a tab order, except frames, must have an instance name specified in the Instance Name text field of the Property inspector. Even items that are not tab stops, such as text, need to be included in the tab order if they are to be read in that order.

Because static text cannot be assigned an instance name, it cannot be included in the list of the *tabIndex* property values. As a result, a single instance of static text anywhere in the SWF file causes the reading order to revert to the default.

To specify a tab order, assign an order number to the *tabIndex* property, as the following example shows:

```
_this.myOption1.btn.tabIndex = 1
_this.myOption2.txt.tabIndex = 2
```

See *tabIndex* in *Button*, *MovieClip*, and *TextField* in the *ActionScript 2.0 Language Reference* at www.adobe.com/go/learn_cs5_as2lr_en.

You can also use the *tabChildren()* or *tabEnabled()* methods to assign custom tab order. See *MovieClip.tabChildren*, *MovieClip.tabEnabled*, and *TextField.tabEnabled* in the *ActionScript 2.0 Language Reference* at www.adobe.com/go/learn_cs5_as2lr_en.

Using accessible components

A core set of UI components accelerates building accessible applications. These components automate many of the most common accessibility practices related to labeling, keyboard access, and testing and help ensure a consistent user experience across rich applications. Animate includes the following set of accessible components:

- SimpleButton
- CheckBox
- RadioButton
- Label
- TextInput
- TextArea
- ComboBox
- ListBox

- Window
- Alert
- DataGrid

For each accessible component, enable the accessible portion of the component with the *enableAccessibility()* command. This command includes the accessibility object with the component as the document is compiled. Because no simple way exists to remove an object after it is added to the component, these options are disabled by default. Therefore, it's important that you enable accessibility for each component. Perform this step only once for each component; you do not need to enable accessibility for each instance of a component for a given document. See "Button component", "CheckBox component", "ComboBox component", "Label component", "List component", "RadioButton component", and "Window component" in the ActionScript 2.0 Components Language Reference at www.adobe.com/go/learn_cs5_as2lr_en.

Debugging ActionScript 3.0

About the ActionScript 3.0 debugger

Animate includes a separate debugger for ActionScript 3.0 that operates differently from the ActionScript 2.0 debugger. The ActionScript 3.0 debugger only works with ActionScript 3.0 FLA and AS files. FLA files must have publish settings set to Flash Player 9. When you initiate an ActionScript 3.0 debugging session, Animate launches the stand-alone debug version of Flash Player to play the SWF file. The debug Flash player plays the SWF in a separate window from the Animate authoring application window.

The ActionScript 3.0 debugger converts the Animate workspace to a debug workspace that displays panels that are used for debugging. It also includes the Actions panel and/or Script window, the Debug console, and the Variables panel. The Debug console displays the call stack and contains tools for stepping through scripts. The Variables panel displays the variables in the current scope with their values and allows you to update those values yourself.

Additional resources

The following resources provide additional detailed information about debugging ActionScript 3.0:

Enter debugging mode

The way you begin a debugging session depends on the type of file you are working on. During a debugging session, Animate interrupts the execution of ActionScript when it encounters a breakpoint or a runtime error.

When Animate initiates a debug session, it adds special information to the SWF file that it exports for the session. This information allows the debugger to provide the specific line numbers in the code where errors are encountered.

You can include this special debugging information in all SWF files created from a specific FLA file in the Publish settings. This allows you to debug the SWF file even if you do not explicitly initiate a debug session. This debugging information makes the SWF file slightly larger.

Choose a default debugging environment

- Choose **Debug** > **Debug Movie** and then choose one of the following:
  - Animate
  - AIR Debug Launcher (Desktop)

- AIR Debug Launcher (Mobile)
- on Device via USB (CS5.5 only)

All debug sessions will take place in the environment you choose. You can change the default environment at any time.

Start debugging from a FLA file

? Select **Debug** > **Debug**

(Versions CS6 and earlier) Select **Debug** > **Debug Movie** > **Debug**.

Start debugging from an ActionScript 3.0 AS file

1 With the ActionScript file open in the Script window, select the FLA file that the ActionScript file should be compiled with from the Target menu at the top of the Script window. The FLA file must also be open to appear in this menu.

2 Select **Debug** > **Debug**

(Version CS6 and earlier) Select **Debug** > **Debug Movie** > **Debug**.

Add debugging information to all SWF files created from a FLA file

1 With the FLA file open, select File > Publish Settings.

2 In the Publish Settings dialog box, click the tab (CS5) or category (CS5.5).

3 Select Permit Debugging.

Exit debugging mode

? Click the End Debug Session button in the Debug Console.

Set and remove breakpoints

Add breakpoints to ActionScript code to interrupt the execution of the code. After execution is interrupted, you can step through and execute the code line by line, view different sections of your ActionScript, view the values of variables and expressions, and edit variable values.

Note:

Breakpoints cannot be added to ASC (ActionScript for Communication) or JSFL (Flash JavaScript) files.

Set a breakpoint

? In the Actions panel or Script window, click in the left margin next to the line of code where you want the breakpoint to appear.

Remove a breakpoint

? In the Actions panel or Script window, click on the breakpoint to remove.

Step through lines of code

After the ActionScript execution is interrupted at a breakpoint or runtime error, you can step through the code line by line. You may choose to step into function calls or step over them. You can also choose to continue executing the code without stepping.

Step into code line by line

? Click the Step In button in the Debug Console.

Step over a function call

? Click the Step Over button in the Debug Console.

Step out of a function call

? Click the Step Out button in the Debug Console.

Resume normal code execution

? Click the Continue button in the Debug Console.

Display and examine scripts in the call stack

When code execution stops in the debugger, you can view the call stack in the Debug Console and display the scripts containing the functions in the call stack. The call stack shows the current list of nested function calls that are waiting to complete execution.

You can view the individual scripts that contain each function.

? In the Debug Console panel, double click the name of the script in the call stack.

Display and modify variable values

View and edit the values of variables and properties in the Variables panel.

View a variable value

1 In the Variables panel, select the types of variables to display from the Panel menu.
   - Show Constants displays the values constants (variables having a fixed value).
   - Show Statics displays variables that belong to the class, rather than to instances of the class.
   - Show Inaccessible Member Variables displays variables that are not accessible to other classes or namespaces. This includes variables that are protected, private or internal to the namespace.
   - Show Additional Hexadecimal Display adds hexadecimal values wherever decimal values are displayed. This is mainly useful for color values. Hexadecimal values are not displayed for decimal values from 0 through 9.
   - Show Qualified Names displays variables types with both the package name and the class name.
2 Expand the tree view of the object structure of the FLA until you see the variable to view.

Edit the value of a variable

1 In the Variables panel, double click on the value of the variable.
2 Enter the new value for the variable and press Enter. The new value is used during subsequent code execution.

Control compiler warnings

Control the types of compiler warnings that the ActionScript compiler generates in the Compiler Errors panel. When the compiler reports an error, double-click the error to navigate to the line of code that caused the error.

1 Select File > Publish Settings.
2 Click Animate.
3 Click the ActionScript Settings button.

4 Select among the Errors options:

- Strict Mode reports warnings as errors, which means that compilation will not succeed if those errors exist.
- Warnings Mode reports extra warnings that are useful for discovering incompatibilities when updating ActionScript 2.0 code to ActionScript 3.0.

Navigate to errors in code

When Animate encounters an error in ActionScript code, either during compiling or execution, it reports the error in the Compiler Errors panel. Navigate to the line of code that caused the error from the Compiler Errors panel.

? Double click the error in the Compiler Errors panel.

Debug a remote ActionScript 3.0 SWF file

With ActionScript 3.0, you can debug a remote SWF file by using the stand-alone, ActiveX, or plug-in version of the Debug Flash Player, which you can find in the Animate install directory/Players/Debug/ directory. However, in the ActionScript 3.0 Debugger, remote debugging is limited to files located on the same localhost as the Animate authoring application, being played in the stand-alone debug player, ActiveX control, or plugin.

To permit remote debugging of the file, enable debugging in the Publish settings. You can also publish your file with a debugging password to ensure that only trusted users can debug it.

As in JavaScript or HTML, users can view client-side variables in ActionScript. To store variables securely, send them to a server-side application instead of storing them in your file. However, as a developer, you may have other trade secrets, such as movie clip structures, that you do not want to reveal. You can use a debugging password to protect your work.

Enable remote debugging of a SWF file and set a debugging password

In ActionScript 3.0 FLA files, code in frame scripts cannot be debugged. Only code in external AS files can be debugged with the ActionScript 3.0 Debugger.

1 Open the FLA file.

2 Select File > Publish Settings.

3 In the Publish Settings dialog box, click the tab (CS5) or category (CS5.5), and then select Permit Debugging.

4 Close the Publish Settings dialog box, and select one of the following commands:

- File > Export > Export Movie
- File > Publish

5 Leave the SWF file on the local machine to perform a remote debug session on the localhost, or upload it to your web server.

The SWF file contains no breakpoint information, so if you upload the file to a remote server you will not be able to step through code. Use the localhost to perform this task.

6 In Animate, select Debug > Begin Remote Debug Session > ActionScript 3.0.

Animate opens the ActionScript 3.0 Debugger and waits for a debug Flash Player to connect. You have 2 minutes to start the debug Flash Player. If more than 2 minutes elapse, repeat this step.

7 Open the SWF file in the debug version of the Flash Player plugin, ActiveX control, or stand-alone player. The debug stand-alone player is located in the Animate install directory/Players/Debug/ directory. Do not connect to a file on another machine, as debugger will not be able to receive any breakpoint information.

The debug session begins when the debug player connects to the ActionScript 3.0 Debugger panel.

Note:

Remote debugging does not function if you select the Default Network Interface for AIR 3.4. Instead, select the options to provide Network Interface name and IP Address of the system.

Activate the Debugger from a remote location

1. Open the Animate authoring application if it is not already open.
2. Select Debug > Begin Remote Debug Session > ActionScript 3.0.
3. In a browser or in the debugger version of the stand-alone player, open the published SWF file from the remote location.

   If the Remote Debug dialog box does not appear, right-click (Windows) or Control-click (Macintosh) in the SWF file to display the context menu, and select Debugger.
4. In the Remote Debug dialog box, select Localhost and select the file to open.

   The display list of the SWF file appears in the Debugger. If the SWF file doesn't play, the Debugger might be paused, so click Continue to start it.

Enabling Support for Custom Platforms

This article guides the plug-in developers on how to create Animate plug-ins to support custom platforms. To build a custom platform support plug-in, developers must download the Custom Platform Support Development Kit from the following location:

Download a sample plug-in from the following location and use it as a reference for building a custom support platform support plug-in:

A plug-in consists of the following elements:

- DocType adds a new document type for the custom platform in Animate and controls the authoring features.
- Publisher allows configuration of the publish settings and publishing the document to the custom platform.

For an overview of the Custom Platform Support feature, see Custom Platform Support.

Building a Animate custom platform support plug-in

You can develop a custom platform support plug-in using one of the following methods:

- Create a plug-in using the APIs in the custom platform support development kit.
- Customize the settings of the sample plug-in included in the development kit to suit your requirements.

Custom Platform Support plug-ins are packaged as .zxp files that can be installed with Animate CC. You can host the plug-in on the Adobe Add-ons page for users to download and install using the Creative Cloud application or distribute the plug-ins as .zxp packages to install them using Adobe Extensions Manager.

Software requirements

A developer needs the following software to build a plug-in using the custom platform support development kit.

- Microsoft Windows 7 or Apple Mac OS 10.8 and later

- Microsoft Visual Studio 2012 (for Windows) or XCode 4.5.2 (for Mac)
- Animate CC 2014.1 (October)
- Eclipse IDE for C/C++ Developers
- Adobe Extension Builder 3.0
- Adobe Extension Manager 7.2.1.6

API reference documentation for plug-in developers

The custom platform support development kit contains the following elements:

- FCM (Flash Component Model): The header files contained in the development kit define a framework called FCM, which is responsible for plug-in management.
- DocType: This contains a set of interfaces that helps you to add a new document type to the Animate start page and allows you to enable or disable features for the custom document type.
- DOM (Document Object Model): This contains a set of interfaces that helps you to access the contents of the animate document in the form of a DOM.
- Publisher: This contains a set of interfaces that provides hooks to the publish workflows.

For complete information about the APIs in the custom platform support and examples of how to use them to build your plug-in, see Custom Platform Support API Reference.

Creating a custom platform support plug-in

You can create a custom platform support plug-in as follows:

1. Download the **Custom Platform Support Development Kit**.
2. Extract the contents of the kit to your computer.
3. Open a new project in VisualStudio or Xcode and include the header files in the development kit to your software development project. To quick-start the creation of your custom platform support plug-in, you can use the following sample plug-in available under the SampleCreateJSPlatform directory as the base code for your plug-in project.

   For example, the SampleCreateJS plug-in files are at SampleCreateJSPlatform\Plugin\SampleCreateJS\project\
4. Make necessary changes for your target platform.
5. Compile the code to generate a plug-in (.dll or .plug-in).

Packaging the custom platform support plug-in

You can generate a distributable package of the custom platform support plug-in as follows:

1. Open the sample Eclipse file or in the Eclipse New Project wizard, create a new Application Extension Project. Provide a name for the project, then click Next.
2. On the New Adobe Application Extension Project panel, choose Adobe Animate as the target application and click Next.
3. Change the extensions of the plug-in files that you had created from *.dll* to *.fcm* on Windows and from .plug-in to .fcm.plug-in on Mac and add the plug-in files to the project (*ExtensionContent/plugins/lib/win* for Windows and *ExtensionContent/plugins/lib/mac* for MAC).

4 Configure your extension by modifying the manifest.xml. To open the manifest file, right-click on the extension in project explorer and select Adobe Extension Builder 3 > Bundle Manifest Editor and select the manifest tab in Bundle Manifest Editor present at *EclipseProject**.staged-extension**CSXS*.

5 To enable editing the *manifest.xml*, right-click inside the window and select Open with > XML editor. The two tags that you must concentrate on are: *ExtensionList* and *DispatchInfoList*:

A typical *ExtensionList* tag looks as below:

```
<ExtensionList>
       <Extension Id="PluginID" Version="1.0" />
       <Extension Id="PublishSettingsID" Version-"1.0" />
</ExtensionList>
```

This tag contains the list of extensions in the final ZXP package in which each extension has a unique string as its ID. In this case, the .dll or .plugin file created in the previous section is included in an extension. Then, the other extension is used for configuring the Publish Settings UI of the Publisher. In the sample, *ExtensionList* tag the extension with the extension ID *PluginID* contains the .dll/.plugin file and the extension with the ID *PublishSettingsID* configures the publish pettings UI of the publisher.

? The *DispatchInfoList* tag contains details about each extension mentioned in the *ExtensionList*. The following is an example of *DispathInfoList*:

```
<DispatchInfoList>
           <Extension Id="PluginID">
                   <DispatchInfo >
                           <Resources>
                           <MainPath>./plugin/fcm.xml</MainPath>
                           </Resources>
                           <Lifecycle>
                           <AutoVisible>true</AutoVisible>
                           </Lifecycle>
                           <UI>
                               <Type>ModalDialog</Type>
                               <Menu>CreateJS</Menu>
                               <Geometry>
                                    <Size>
                                          <Height>200</Height>
                                          <Width>200</Width>
                                    </Size>
                                </Geometry>
                            </UI>
                   </DispatchInfo>
       </Extension>
       <Extension Id="PublishSettingsID">
```

```
                    <DispatchInfo >
                            <Resources>
                            <MainPath>./index.html</MainPath>
                            </Resources>
                            <Lifecycle>
                                    <AutoVisible>true</AutoVisible>
                            </Lifecycle>
                            <UI>
                                    <Type>ModalDialog</Type>
                                    <Menu>Publish Settings</Menu>
                                    <Geometry>
                                         <Size>
                                                <Height>170</Height>
                                                 <Width>486</Width>
                                          </Size>
                                    </Geometry>
                            </UI>
                    </DispatchInfo>
          </Extension>
</DispatchInfoList>
```

1 For the extension containing the .dll or the .plugin file, you can ignore all the tags except the *MainPath* tag. The MainPath tag contains path to the file *fcm.xml* relative to the ExtensionContent folder. You must rename the .dll file to .fcm and placed inside the *win* folder beside the *fcm.xml*. Similarly, if you are working on the Mac environment, rename the .plugin file to .fcm.plugin and place it inside the *mac* folder beside the *fcm.xml*.

2 The HTML extension to configure the publish settings user interface is an HTML extension to Animate. To know more about HTML extensions to Animate, see Creating HTML Extensions.

3 Ensure that the lower value of the version attribute in the *Host* tag is *14.0*, the minimum (inetrnal) version of Animate CC with Custom Platform Support.

```
<ExecutionEnvironment>
<HostList>
<Host Name="FLPR" Version="14.0" />
</HostList>.
.
.
</ExecutionEnvironment>
```

4 Switch to the Script Explorer view, right-click on your project and choose Export > Adobe Extension Builder 3 > Application Extension. The Export Wizard appears.

5 You must have a certificate to sign the extension package. Browse to an existing certificate or click Create to create a new certificate.

6 Click Finish to compile the project. Eclipse generates a plug-in file with .zxp extension, which you can host on the Adobe Add-ons site.

Distributing your custom platform support plug-in

You can distribute the custom platform support plug-in by hosting it on the Adobe Add-ons page and monetize it. Your plug-in package goes through an Adobe review and approval process before it is listed on the page. You can host a plug-in as follows:

1 Log in to the Adobe Add-ons page using your Adobe user ID and password.

2 On the left panel, under Become a producer, click the link Go to the producer portal.

3 Click the Sign-up button if you are not signed up as a producer.

4 For detailed instructions on how to sign up as a producer and host your plug-ins, see Getting Started with the Producer Portal.

5 Complete the following steps in the producer portal workflow as documented in the Getting Started page:

   1 Package your product in a single file.

   2 Enter information about the product and upload the file.

   3 Add marketing assets.

   4 Preview your product.

   5 Submit your product for approval.

6 After approval, your plug-in is listed under the Animate product category on the Add-ons page.

Note:

- If you are a user who wants to install a plug-in, create a custom platform document, and publish it using Animate, see Working with Custom Platform Support Plug-in.
- For complete information about managing Adobe extensions, see Downloading and Installing Extensions.

Feature requests and bug reporting

Fill the following form if you want to send any questions, concerns, product bugs, or feature requests to the Animate product team:

Adobe Feature Requests and Bug Report Form

Chapter 6: Exporting and Publishing

How to export files from Animate CC

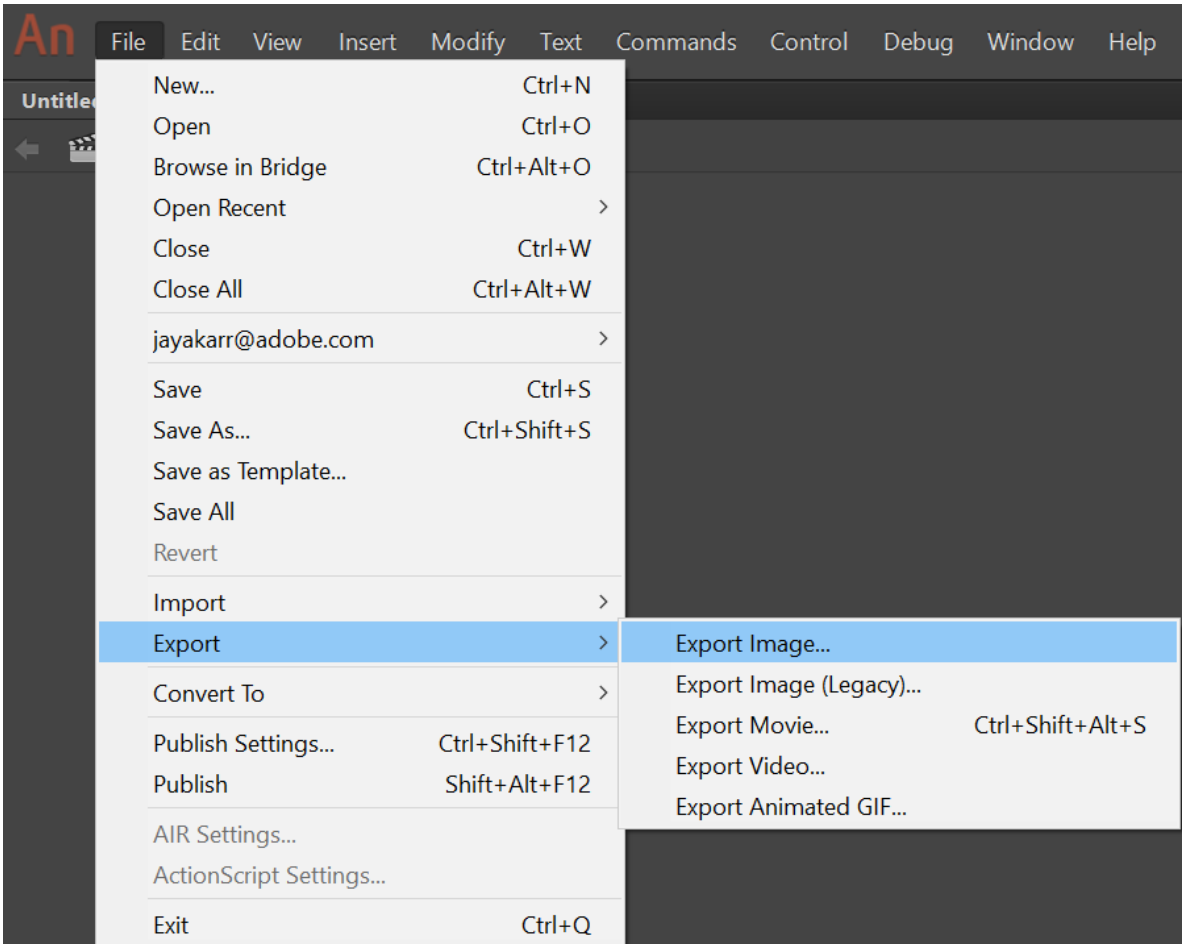
Export SWF files

The Animate Export commands do not store export settings separately with each file, as does the Publish command. (To create all the files you need to put Animate content on the web, use the Publish command.)

Export Movie exports a Animate document to a still-image format, creates a numbered image file for every frame in the document, and exports the sound in a document to a WAV file (Windows only).

1 Open the Animate document to export, or select the frame or image to export in the current document.

2 Select **File** > **Export** > **Export Movie** or **File** > **Export** > **Export Image**.



Export image

3 Enter a name for the output file.

4 Select the file format and click Save. If the format you selected requires more information, an Export dialog box appears.

5 Set the export options for the format you selected. See About export file formats.

6 Click OK, and then click Save.

About export file formats

Remember the following:

- If the format you selected requires more information, an Export dialog box appears.
- When you save a Animate image as a bitmap GIF, JPEG, PICT (Macintosh), or BMP (Windows) file, the image loses its vector information and is saved with pixel information only. You can edit images exported as bitmaps in image editors such as Adobe® Photoshop®, but you can no longer edit them in vector-based drawing programs.
- When you export a Animate file in the SWF format, text is encoded as Unicode, providing support for international character sets, including double-byte fonts. Flash Player 6 and later versions support Unicode encoding.

Animate content is exported as sequences and images are exported as individual files. PNG is the only cross-platform bitmap format that supports transparency (as an alpha channel). Some non-bitmap export formats do not support alpha (transparency) effects or mask layers.

The following table lists the formats that you can export Animate content and images to:

File type	Extension	Windows	Macintosh
Animated GIF, GIF Sequence, and GIF Image	.gif	•	•
Bitmap (BMP) Sequence and Bitmap Image	.bmp	•	
Animate document (SWF)	.swf	•	•
JPEG Sequence and JPEG Image	.jpg	•	•
PICT Sequence and PICT Image (Macintosh)	.pct		•
PNG Sequence and PNG Image	.png	•	•
Export QuickTime	.mov	•	•
WAV audio (Windows)	.wav	•	
Windows AVI (Windows)	.avi	•	

Update SWF files for Dreamweaver

To add the content to your page, export SWF files directly to an Adobe® Dreamweaver® site. Dreamweaver generates all the needed HTML code. You can start Animate from Dreamweaver to update the content. In Dreamweaver, you can update the Animate document (FLA file) and re-export the updated content automatically.

For more information on working with Dreamweaver, see Using Dreamweaver in Dreamweaver Help.

1. In Dreamweaver, open the HTML page that contains the Animate content.
2. Do one of the following:
   - Select the Animate content within the HTML page, and click Edit.
   - In Design view, press Control (Windows) or Command (Macintosh), and double-click the Animate content.
   - In Design view, right-click (Windows) or Control-click (Macintosh) the Animatecontent, and select Edit with Animate.
   - In Design view, in the Site panel, right-click (Windows) or Control-click (Macintosh) the Animate content, and select Open with Animate.
3. If the FLA file for the exported file does not open, the Open File dialog box appears. Navigate to the FLA file, and click Open.
4. If the user used the Change Link Sitewide feature in Dreamweaver, a warning appears. To apply link changes to the SWF file, click OK. To prevent the warning message from appearing when you update the SWF file, click Don't Warn Me Again.
5. Update the FLA file as needed in Animate.
6. To save the FLA file and reexport it to Dreamweaver, do one of the following:
   - To update the file and close Animate, click the Done button above the upper-left corner of the Stage.

- To update the file and keep Animate open, select File > Update for Dreamweaver.

OAM publishing

You can now export Animate content in HTML5 Canvas, ActionScript, or WebGL to OAM (.oam) animated widget files. The OAM files generated from Animate can be placed in other Adobe applications such as Dreamweaver, Muse, and InDesign.

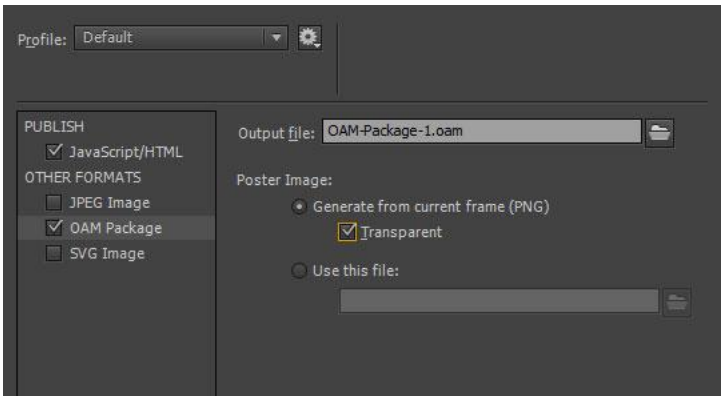
Exporting and publishing animate content to an OAM format

1 Select **File > Publish settings > OAM Package**. Select the **OAM package** checkbox.

2 In the **Output File** field, browse for the package location and enter the package name.

3 Within the **Poster Image** section, select one of the following options:

- Select **Generate from current frame (PNG)** to generate from the contents of the current frame. Select **Transparent** to set a transparent PNG as **Poster Image.**
- Select **Use this file** to specify an external PNG file as a **Poster Image.**



OAM publish settings

Creating OAMs with a transparent background for canvas document types

1 Open the Canvas document you wish to export.

2 In the **Properties** panel, select **Stage color** and set the **Alpha percentage** as 0.

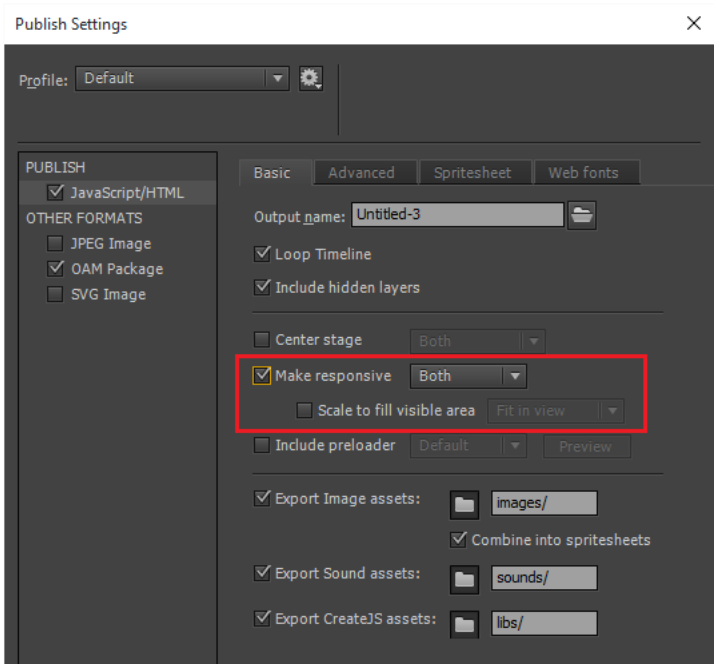
3 Use the options in **Publish Settings** to publish as OAM.

Canvas transparency

Creating responsive OAMs for canvas doc types

1 Select **File>Publish Settings**.

2 In the **Basic** tab, select **Make Responsive** checkbox. This ensures that the animation is responsive with reference to Width, Height, or both and resizes the published output based on various form factors. The result is a responsive, sharper and a crisper HiDPI compliant output.



Responsive scaling

3 Use the options in **Publish Settings** to publish as OAM.

Example of using OAM in other Adobe applications (Muse)

1 Launch Adobe Muse and open the site you want to edit.

2 In **Plan view**, double-click the name of the page you want to add the animation to.

3 Choose **File > Place** and then navigate to select the OAM file in your site folder.

4 Click once on the page to place the animation.

5 Use the **Selection** tool to position the animation on the page at the desired location. Note that although the animation background appears to be opaque in Muse, the background is transparent when you preview or publish the page.

6 Choose **File > Preview Page in Browser** to ensure that the animation displays as expected. If there are any changes you'd like to make, return to Muse and reposition the page elements. If you look in the Assets panel, you'll notice that the .OAM file is now listed as an asset.

7 Click the **Publish link** in the **Control panel**. Choose the desired options and click **OK** to publish the site updates.

Publishing AS3 documents

Publishing overview

You can play content in the following ways:

- In Internet browsers that are equipped with Flash Player
- As a stand-alone application called a projector
- With the Flash ActiveX control in Microsoft Office and other ActiveX hosts
- With Flash Xtra in Director® and Authorware® from Adobe®

By default, the Publish command creates an SWF file and an HTML document that inserts your Flash content in a browser window. The Publish command also creates and copies detection files for Macromedia Flash 4 from Adobe and later. If you change publish settings, Flash saves the changes with the document. After you create a publish profile, export it to use in other documents or for others working on the same project to use.

When you use the Publish, Test Movie, or Debug Movie commands, Flash creates a SWF file from your FLA file. You can view the sizes of all the SWF files created from the current FLA file in the Document Property inspector.

Flash® Player 6 and later support Unicode text encoding. With Unicode support, users can view multilanguage text, regardless of the language that the operating system running the player uses.

You can publish the FLA file in alternative file formats—GIF, JPEG, and PNG —with the HTML needed to display them in the browser window. Alternative formats allow a browser to show your SWF file animation and interactivity for users who don't have the targeted Adobe Flash Player installed. When you publish an FLA file in alternative file formats, the settings for each file format are stored with the FLA file.

You can export the FLA file in several formats, similar to publishing FLA files in alternative file formats, except that the settings for each file format are not stored with the FLA file.

Alternatively, create a custom HTML document with any HTML editor and include the tags required to display a SWF file.

To test how the SWF file works before you publish your SWF file, use Test Movie (Control > Test Movie > Test) and Test Scene (Control > Test Scene).

HTML wrapper for AS3 documents

You need an HTML document to play a SWF file in a web browser and specify browser settings. To display a SWF file in a web browser, an HTML document must use the *object* and *embed* tags with the proper parameters.

Note:

You can generate an HTML document using the correct object and embed tags using the Publish Settings dialog box, and selecting the HTML option. For more information, see Specify publish settings for HTML documents .

Animate can create the HTML document automatically when you publish a SWF file.

Detecting whether Flash Player is present

In order for your published Animate content to be seen by Web users, Flash Player must be installed in their Web browser.

The following resources and articles provide up-to-date information about how to add code to your web pages to determine if Flash Player is installed and provide alternative content in the page if it is not.

See Flash Player Help to determine if Flash Player is installed or not.

Publishing for mobile devices

Adobe® AIR® for Android® and iOS® lets you create engaging content for mobile devices using the ActionScript® scripting language, drawing tools, and templates. For detailed information on authoring for mobile devices, see the AIR Developer Reference.

Note:

Depending on the mobile device for which you are developing, certain restrictions can apply as to which ActionScript commands and sound formats are supported. For more details, see Mobile Articles on the Mobile and Devices Development Center.

Testing mobile content with the Mobile Content Simulator

Mobile Content Simulator is a way to test content created with Adobe AIR in an emulated Android or iOS environment. With the Mobile Content Simulator, you can use the Control > Test Movie command to test your file in the AIR Debug Launcher for Mobile, which in turn launches the simulator.

Once the simulator window is opened, you can send input to the document as if it were running on a mobile device. The inputs available include:

- Accelerometer, X, Y, and Z axes
- Orientation threshold angle
- Touch and gestures, including pressure sensitivity
- Geolocation, direction, and velocity
- Hardware keys (found on Android devices)

Publishing secure AS3 documents

Flash Player 8 and later contain the following features that help you ensure the security of your documents:

Buffer overrun protection

Enabled automatically, this feature prevents the intentional misuse of external files in a document to overwrite a user's memory or insert destructive code such as a virus. This prevents a document from reading or writing data outside the document's designated memory space on a user's system.

Exact domain matching for sharing data between documents

Flash Player 7 and later enforce a stricter security model than earlier versions. The security model changed in two primary ways between Flash Player 6 and Flash Player 7:

Exact domain matching Flash Player 6 lets SWF files from similar domains (for example, *www.adobe.com* and *store.adobe.com*) communicate freely with each other and with other documents. In Flash Player 7, the domain of the data to be accessed must match the data provider's domain *exactly* for the domains to communicate.

HTTPS/HTTP restriction A SWF file that loads by using nonsecure (non-HTTPS) protocols cannot access content loaded by using a secure (HTTPS) protocol, even when both protocols are in exactly the same domain.

Local and network playback security

Flash Player 8 and later include a security model that lets you determine the local and network playback security for SWF files that you publish. By default, SWF files are granted read access to local files and networks. However, a SWF file with local access cannot communicate with the network, and the SWF file cannot send files or information to any networks.

Allow SWF files to access network resources, letting the SWF file send and receive data. If you grant the SWF file access to network resources, local access is disabled, protecting information on the local computer from potentially being uploaded to the network.

To select the local or network playback security model for your published SWF files, use the Publish Settings dialog box.

Flash Player

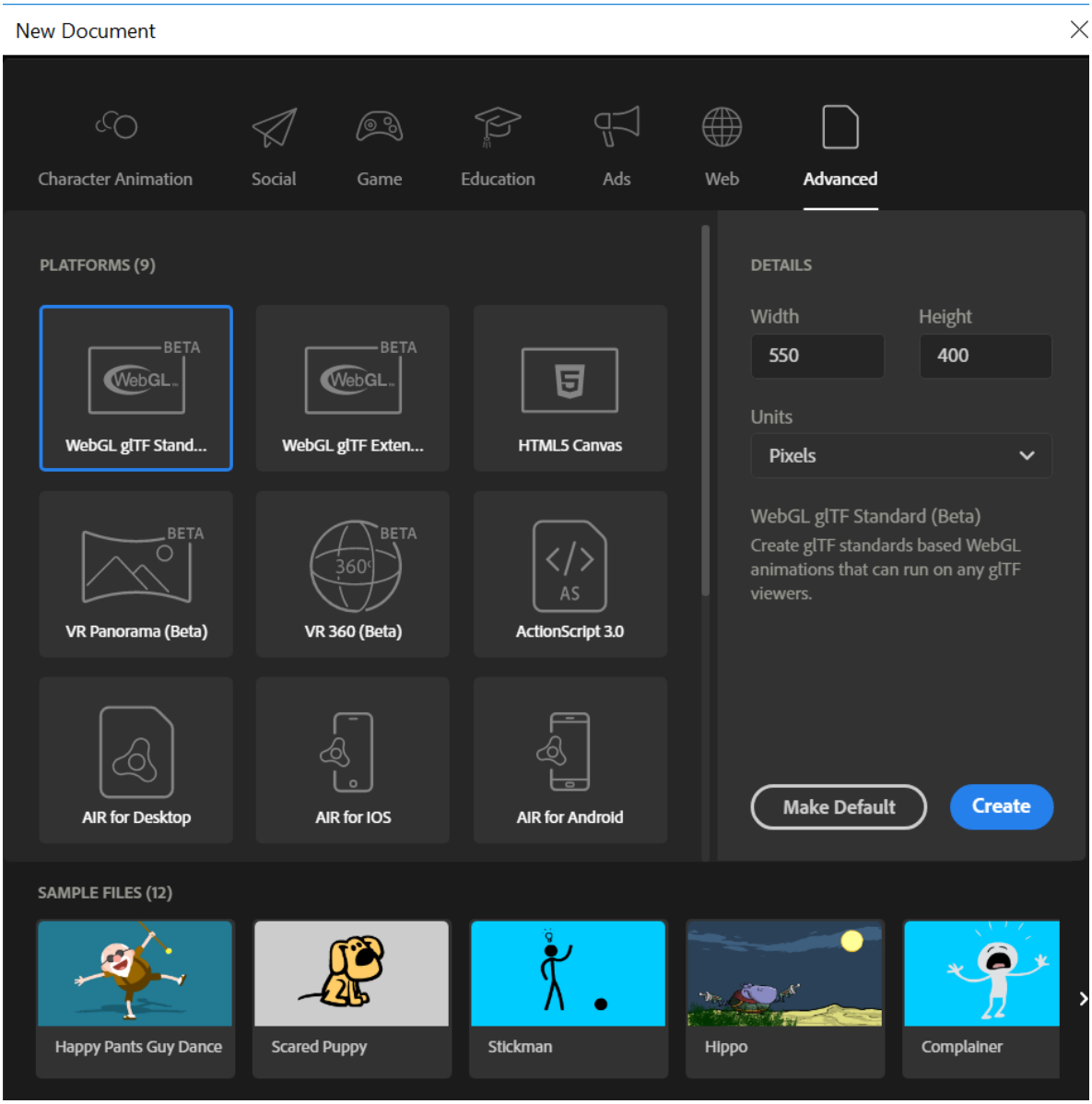
Flash Player plays Flash content in the same way as it appears in a web browser or an ActiveX host application. Flash Player is installed with the Flash application. When you double-click Flash content, the operating system starts Flash Player, which then plays the SWF file. Use the player to make content viewable for users who aren't using a web browser or an ActiveX host application.

To control content in Flash Player, use menu commands and the *fscommand()* function.

Use the Flash Player context menu to print Flash Pro content frames.

? Do one of the following:

- To open a new or existing file, select File > New, or Open.
- To change your view of the application, select View > Magnification and make a selection.
- To control content playback, select Control > Play, Rewind, or Loop Playback.



New Document

Update or Reinstall Flash Player

If you are having trouble with your Flash Player installation, you can update or reinstall it. You can go to the Flash Player download page directly from Flash by choosing Help > Get Latest Flash Player.

If you prefer to uninstall Flash Player first, follow these steps:

1. Close your browser.
2. Remove any currently installed version of the player.

   For instructions, see TechNote 14157 in the Support Center at www.adobe.com/go/tn_14157.
3. To begin the installation, visit http://www.adobe.com/go/getflashplayer.

Follow the on-screen instructions to install the player.

You can also run one of the following installers in your Players folder. However, the installer on the Adobe website is usually more up to date than those in the Players folder.

- For the ActiveX control for Windows® (Internet Explorer or AOL), run the Install Flash Player 9 AX.exe file.
- For the plug-in for Windows (Firefox, Mozilla, Netscape, Safari, or Opera), run the Install Flash Player 9.exe file.
- For the plug-in for Macintosh® (AOL, Firefox, Internet Explorer for Macintosh, Netscape, Opera, or Safari), run Install Flash Player 10 (Mac OS 9.x) or Install Flash Player 10 OS X (Mac OS X.x).

Note:

To verify the installation visit http://www.adobe.com/shockwave/welcome/ from within your web browser.

Configure a server for Flash Player

For users to view your Flash content on the web, the web server must be properly configured to recognize SWF files.

Configuring a server establishes the appropriate Multipart Internet Mail Extension (MIME) types so that the server can identify files with the .swf extension as Flash files.

A browser that receives the correct MIME type can load the appropriate plug-in, control, or helper application to process and properly display the incoming data. If the MIME type is missing or not properly delivered by the server, the browser might display an error message or a blank window with a puzzle-piece icon.

- If your site is established through an Internet service provider (ISP), ask the ISP to add this MIME type to the server: application/x-shockwave-flash with the .swf extension.
- If you are administering your own server, see your web server documentation for instructions on adding or configuring MIME types.
- Corporate and enterprise system administrators can configure Flash to restrict Flash Player access to resources in the local file system. Create a security configuration file that limits Flash Player functionality on the local system.

The security configuration file is a text file placed in the same folder as the Flash Player installer. The Flash Player installer reads the configuration file during installation and follows its security directives. Flash Player uses the System object to expose the configuration file to ActionScript.

With the configuration file, disable Flash Player access to the camera or microphone, limit the amount of local storage Flash Player can use, control the auto-update feature, and block Flash Player from reading anything from the user's local hard disk.

Adding MIME Types

When a web server accesses files, the server must properly identify the files as Flash content to display them. If the MIME type is missing or not properly delivered by the server, the browser can show error messages or a blank window with a puzzle-piece icon.

If your server is not properly configured, you (or your server's administrator) must add the SWF file MIME types to the server's configuration files and associate the following MIME types with the SWF file extensions:

- MIME type application/x-shockwave-flash has the .swf file extension.
- MIME type application/futuresplash has the .spl file extension.

If you are administering a server, consult your server software documentation for instructions on adding or configuring MIME types. If you are not administering a server, contact your Internet service provider, web master, or server administrator to add the MIME type information.

If your site is on a Mac OS server, you must also set the following parameters: Action: Binary; Type: SWFL; and Creator: SWF2.

Search engine optimization for SWF content

In mid-2008, Adobe announced a significant advance in Flash Player technology that allows the text content inside SWF files to be indexed by search engines such as Google and Yahoo!. There are a variety of strategies you can employ to optimize the visibility of your SWF content to search engines. These practices as a whole are referred to as search engine optimization (SEO).

About Omniture and Flash

Flash content can be integrated with Omniture SiteCatalyst and Omniture Test&Target. SiteCatalyst helps marketers quickly identify the most profitable paths through their website, determine where visitors are navigating away from their site, and identify critical success metrics for online marketing campaigns. Test&Target gives marketers the capability to continually make their online content more relevant to their customers. Test&Target provides an interface for designing and executing tests, creating audience segments and targeting content.

Omniture customers can use SiteCatalyst and Test&Target with Flash by downloading and installing the Omniture Extension pack.

- To download the Omniture extensions and access instructions for using them, choose Help > Omniture.

Export animations for mobile apps and game engines

Overview

Animate CC enables you to create sprite sheet or texture atlas animations and export them for mobile apps and game engines.

Sprite Sheet

A sprite sheet is a bitmap image file that contains several smaller graphics in a tiled grid arrangement. By compiling several graphics into a single file, you enable Animate and other applications to use the graphics while only needing to load a single file. This loading efficiency can be helpful in situations such as game development where performance is especially important.

A sprite sheet containing the sprites in a frame-by-frame animation.

You can create a sprite sheet from a selection of any combination of movie clips, button symbols, graphic symbols, or bitmaps. You can select items in the Library panel or on the Stage, but not both. Each bitmap and each frame of the selected symbols appear as a separate graphic in the sprite sheet. If you export from the Stage, any transforms (scaling, skewing, and so on) you have applied to the symbol instance are preserved in the image output.

Texture atlas

Texture atlas is a collection of textures as a single large image. You can optimize your game by creating a texture atlas and using it in your game app.

In Animate, you can create a texture atlas from symbols such as movie clips, graphics, or buttons. You can select items in the Library panel or on the Stage, but not both. Each vector and each keyframe of the selected symbols appear as a separate bitmap in the texture atlas. If you export from the Stage, any transforms (scaling, skewing, and so on) you have applied to the symbol instance are preserved in the image output.

Difference between a sprite sheet and texture atlas

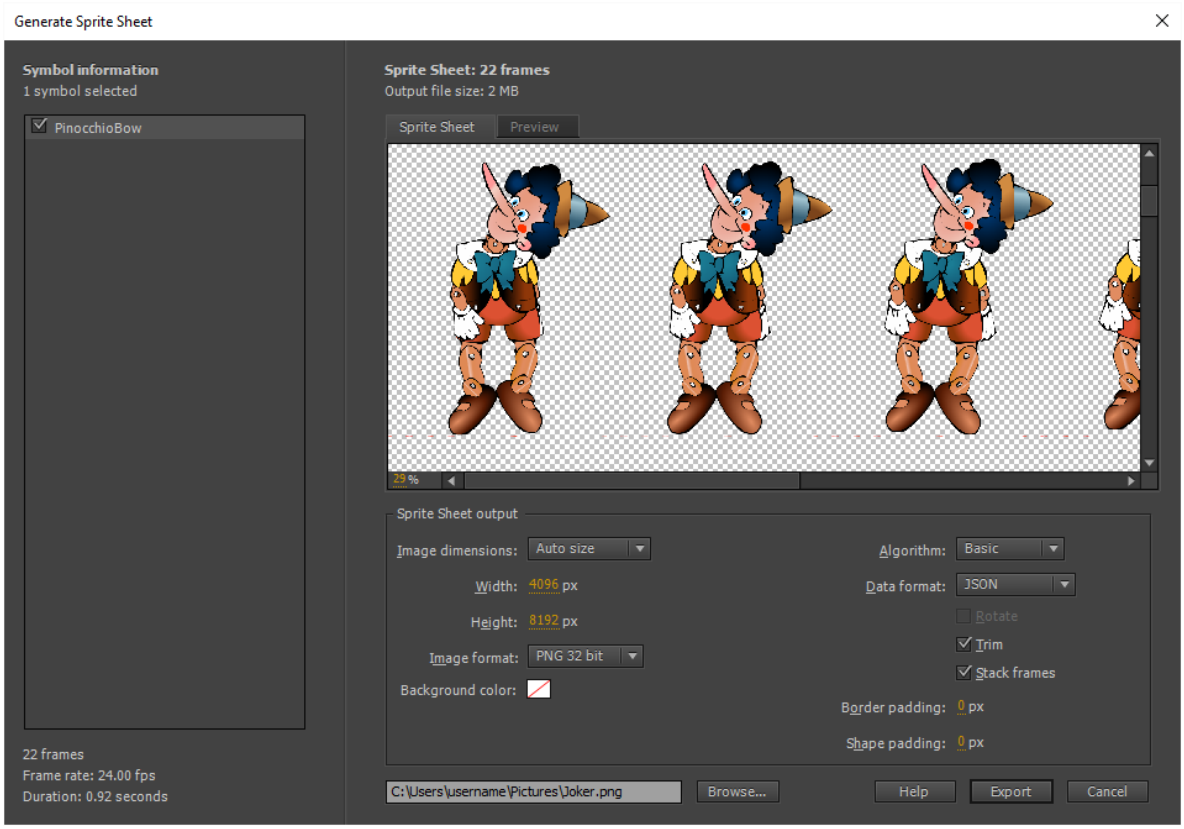
You can use either sprite sheet or texture atlas in your mobile apps as per your requirement. Some of the key differences between sprite sheet and texture atlas are provided in the following table.

Feature	Sprite Sheet	Texture Atlas
Performance in mobile apps	Low	High
Efficiency in loading app	High, as there is no computation	Low, as there is JSON file computation
Size	Occupies more size	Occupies less size
Quality of animation	Medium	High
Number of files generated	Two files: one bitmap and one json	Three files: one bitmap and two json files
Number of bitmaps generated	Based on number of frames used in sprite sheet, number of bitmap files can also increase resulting in the increase of sprite sheet size	Only unique bitmaps are generated in sprite, thus reducing the total size.

Creating a sprite sheet

To create a sprite sheet, perform the following steps:

1. Select one or more symbols in the Library or symbol instances on the Stage. The selection can also contain bitmaps.
2. Right-click the selection and choose Generate Sprite Sheet.



3 In the **Generate Sprite Sheet** dialog box, select the required options, and then click **Export**.

Export option	Description
Image dimension	The total size in pixels of the sprite sheet. The default setting is Autosize, which sizes the sheet to fit all the sprites you include.
Image format	The file format of the exported sprite sheet. PNG 8 bit and PNG 32-bit support using a transparent background (alpha channel). PNG 24 bit and JPG do not support transparent backgrounds. Generally, the visual difference between PNG 8 bit and PNG 32 bit is small. PNG 32-bit files are four times as large as 8-bit PNG bit files.
Border Padding	Padding around the edges of the sprite sheet, in pixels.
Shape Padding	Padding between each image within the sprite sheet, in pixels.
Algorithm	The technique used for packing the images into the sprite sheet. There are two options: • Basic (default) • MaxRects
Data Format	The internal format used for the image data. Choose the format that best suits your intended workflow for the sprite sheet after export.

Rotate	Rotates the sprites 90°. This option is only available for some data formats.
Trim	This option saves space on the sprite sheet by trimming unused pixels from each symbol frame added to the sheet.
Stack Frames	Selecting this option prevents duplicate frames within the selected symbols from being duplicated in the resulting sprite sheet.

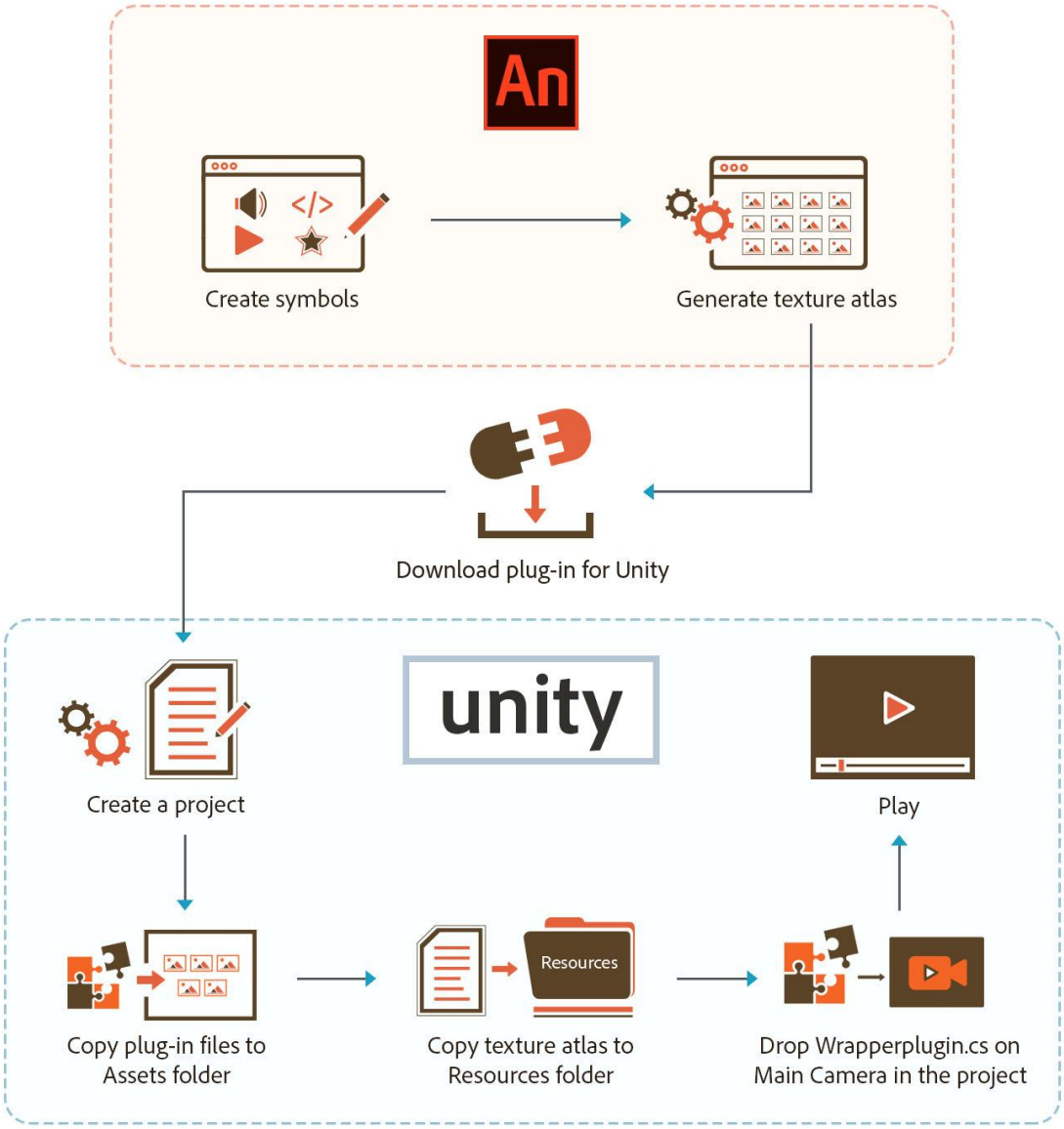
Exporting sprite sheet animation for mobile apps

Exporting sprite sheet animation for mobile apps

Creating a texture atlas

Gaming developers can use Animate to orchestrate animations and export them as texture atlas to Unity game engine or any other favorite gaming platforms.

The process of generating a texture atlas in Animate and importing it in Unity is depicted in the following diagram:

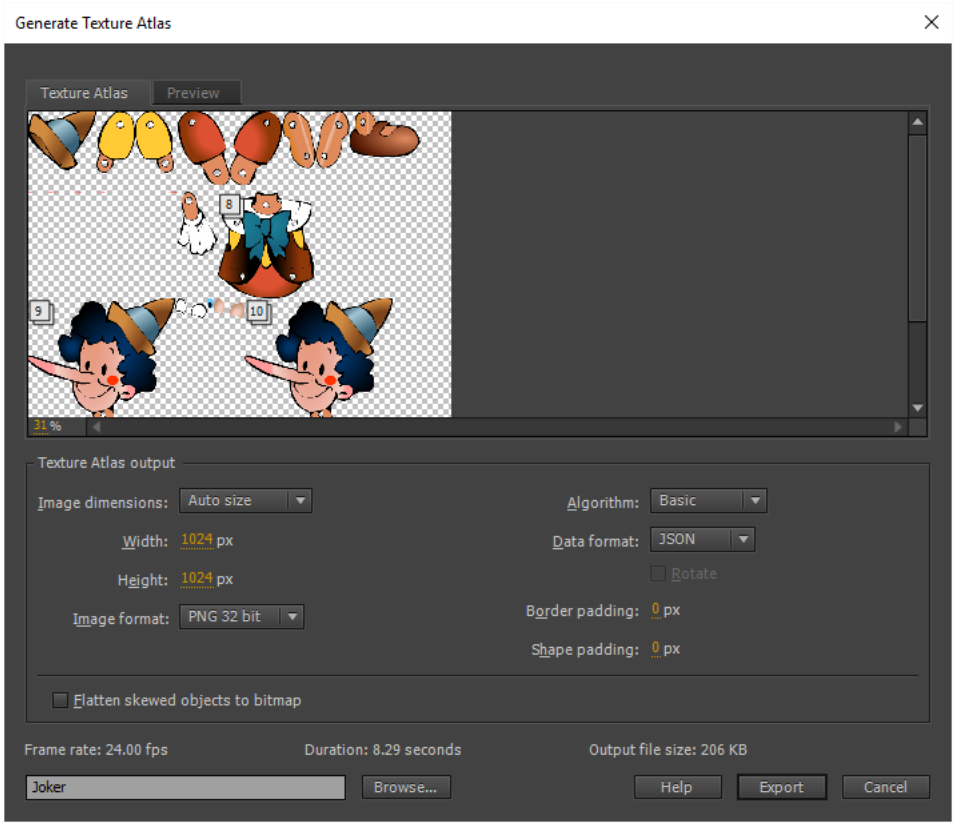


An illustration depicting the workflow for generating texture atlas and importing it into Unity.

To generate texture atlas of your animation, perform the following steps:

1 In Animate, you can generate a texture atlas for a selected symbol from the **Library** or symbol instance on the stage.

2 Right-click the symbol and select **Generate Texture Atlas** from the menu. **Generate Texture Atlas** window appears.



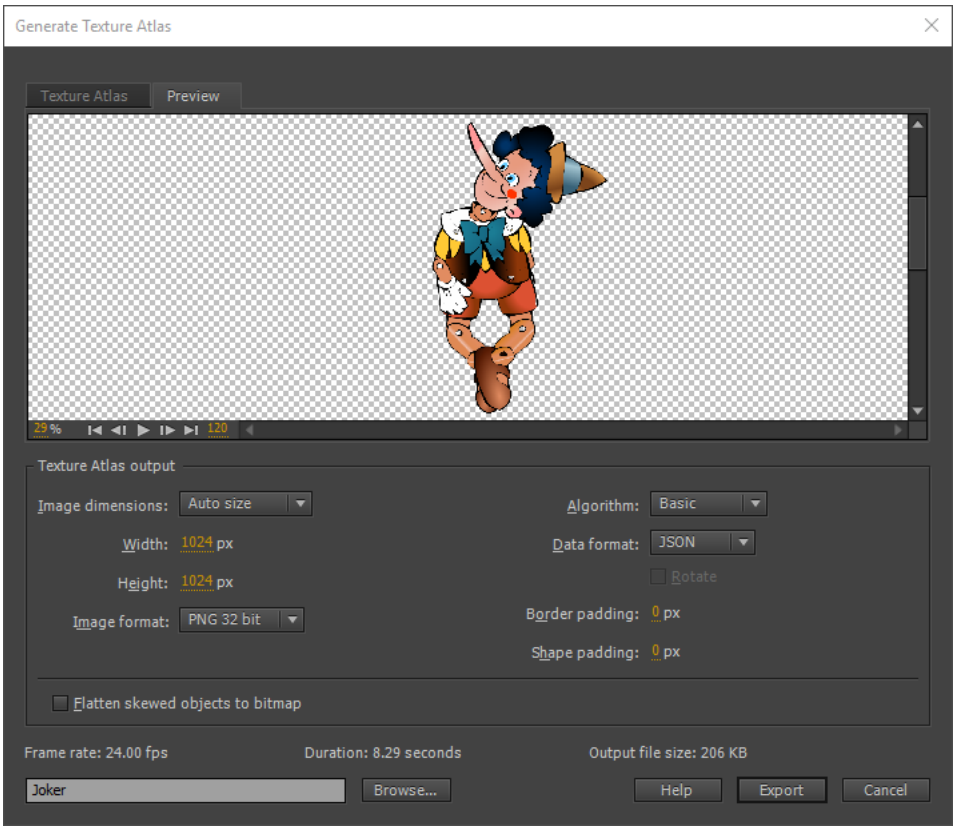
Generate texture atlas

3 Choose the appropriate export options for texture atlas.

Export option	Description
Image dimension	The total size in pixels of the texture atlas. The default setting is Autosize, which sizes the sheet to fit all the images you include.
Image format	The file format of the exported sprite sheet. PNG 8 bit and PNG 32-bit support using a transparent background (alpha channel). Generally, the visual difference between PNG 8 bit and PNG 32 bit is small. PNG 32-bit files are four times as large as 8-bit PNG bit files.
Border Padding	Padding around the edges of the texture atlas, in pixels
Shape Padding	Padding between each image within the texture atlas, in pixels.
Algorithm	The technique used for packing the images into the texture atlas. There are two options: • Basic (default) • MaxRects

Data Format	The internal format used for the image data. The default is the JSON format.
Rotate	Rotates the images in 90°. This option is only available for some data formats.
Flatten skewed objects to bitmap	Select this option if you are using skewed transforms for your objects. Animate converts these objects into bitmap images as some of the game engines do not interpret skew transforms appropriately.

4 To preview the texture atlas output, click **Preview** tab.



Preview the texture atlas after creating it

5 Click **Browse** and choose the destination path in your computer for the output file or enter the path in the text area and click **Export**.

The generated output folder for texture atlas contains the following files:

Animation.json

This file contains information about the Animation.

spritemap.json

This file contains information about *spritesheet.png* file.

spritemap.png

For the exported symbol, this file contains Bitmap representation of all the minimum unique textures required to reconstruct back the animation.

You can use the generated texture atlas in any game engines such as Unity with the suitable importer plug-in.

Importing texture atlas to Unity

You can import the Animate generated texture atlas files to your favorite game engines. To import the texture atlas files, you can create plug-ins corresponding to your game engines. A sample import plug-in is provided for Unity tool.

Import the texture atlas into Unity by performing the following steps:

1. In Unity, create a project at any specific location. At this location, a folder is created with **Assets** sub folder in it.
2. Create two sub folders under **Assets** as **Resources** and **Editor**.
3. Click here to download the sample import plug-in for Unity. Choose **Unity Plugin** from the **Downloads** tab and choose the corresponding version to download.

   The **unity-plugin.zip** consists of *Plugin.cs*, *WrapperPlugin.cs*, *AnimateEditor.cs*, and *Effect.shader* files.

   Download of the sample signifies your agreement to the Terms of Use and Online Privacy Policy.
4. Move the texture atlas files such as Animation.json, spritemap.json, spritemap.png, and the unity plug-in files such as Plugin.cs and Effect.shader to **Assets > Resources**.
5. Move the *AnimateEditor.cs* and W*rapperPlugin.cs* files to **Assets** folder.
6. In Unity, click *AnimateEditor.cs* file and drag it to **Main Camera**.
7. Play. Playing your project splits the sprite map to different sprites.
8. Move *AnimateEditor.cs* to **Editor**.
9. In Unity, click *WrapperPlugin.cs* file and drag it to **Main Camera**. Also, deselect or remove *AnimateEditor.cs* from **Main Camera**.
10. Play or publish the output as per your requirement.

You can even customize the plug-in by modifying the *WrapperPlugin.cs* file as per your requirement.

Unity plug-in supports color effects for Animate generated texture atlas files. Also, the plug-in supports masking through layers. The masking feature is applicable only for Unity 2017 release onwards.

Texture publishing

As an animator, you can continue to author content in vector format and export as vector or raster format for HTML 5 platforms. An option to export animations as a texture atlas has been added in publish settings to enhance performance of the animations.

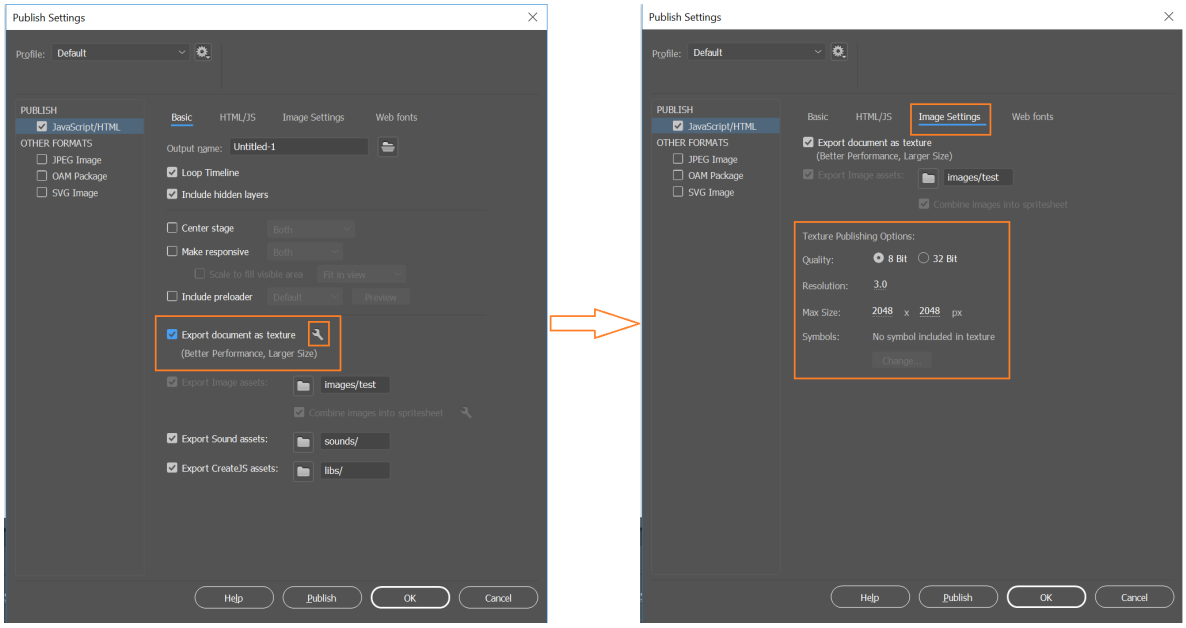
Click **File > Publish Settings**. If **Export document as texture** is enabled in Basic tab, **Image Settings** tab shows Texture Publishing options. By default, all the symbols are included in Texture publishing. To selectively choose symbols for textures, click settings icon adjacent to it.

Though, this option may increase the size of the assets, it improves the performance. Also, you can increase the resolution of images in terms of 2x and 3x the original resolution of the images for targeting **HiDPI** displays. To change the resolution settings, click the spanner icon adjacent to **Export document as texture** option as shown in the screenshot below. Drag the numbers adjacent to Resolution to get the multiples of 2x and 3x.

By default, texture publishing is set at 2X resolution. Also, range for resolution can be changed from 0.3 - 3X.

Note:

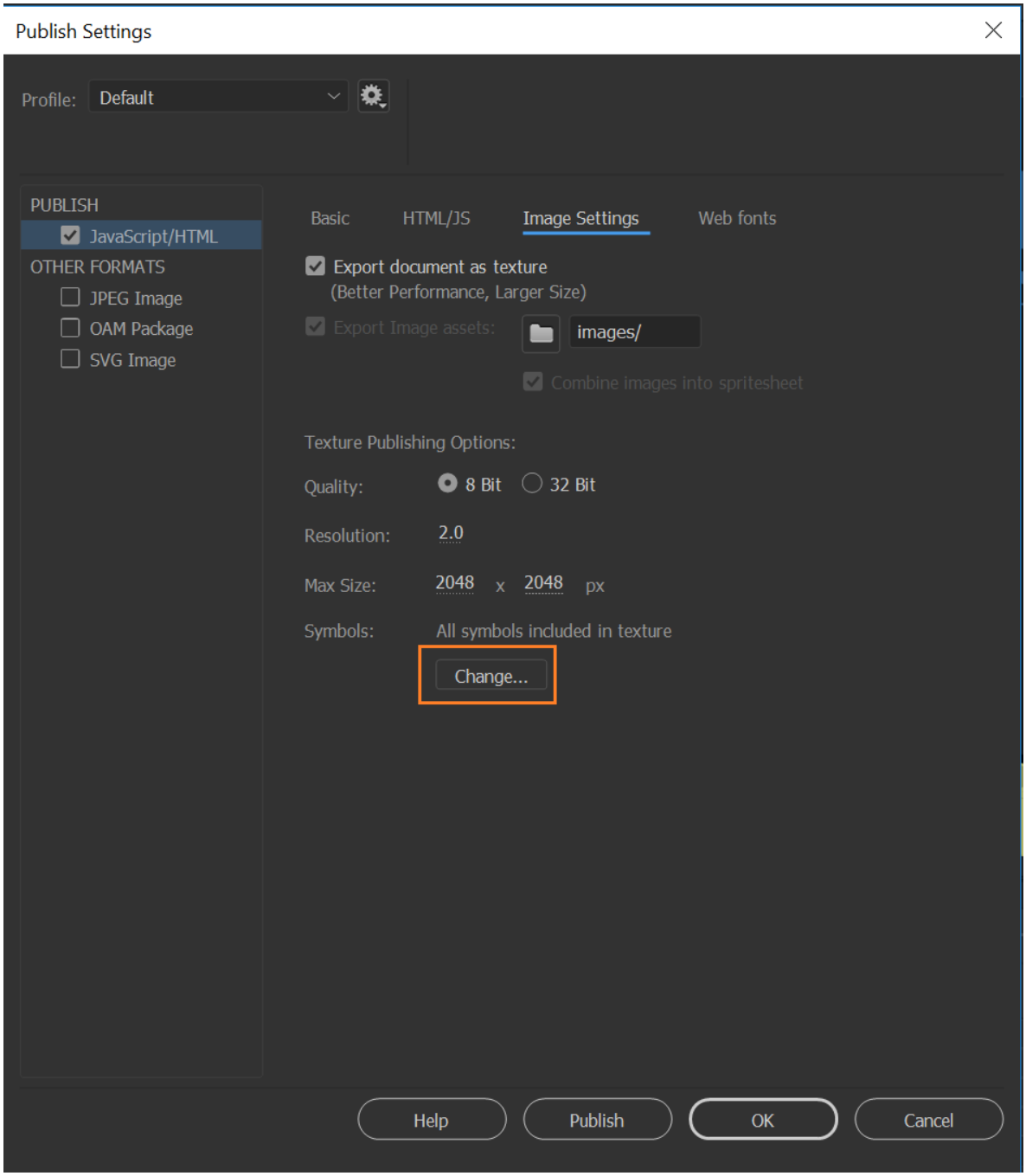
Texture publishing is applicable only to HTML5 Canvas document type.



Export document as texture

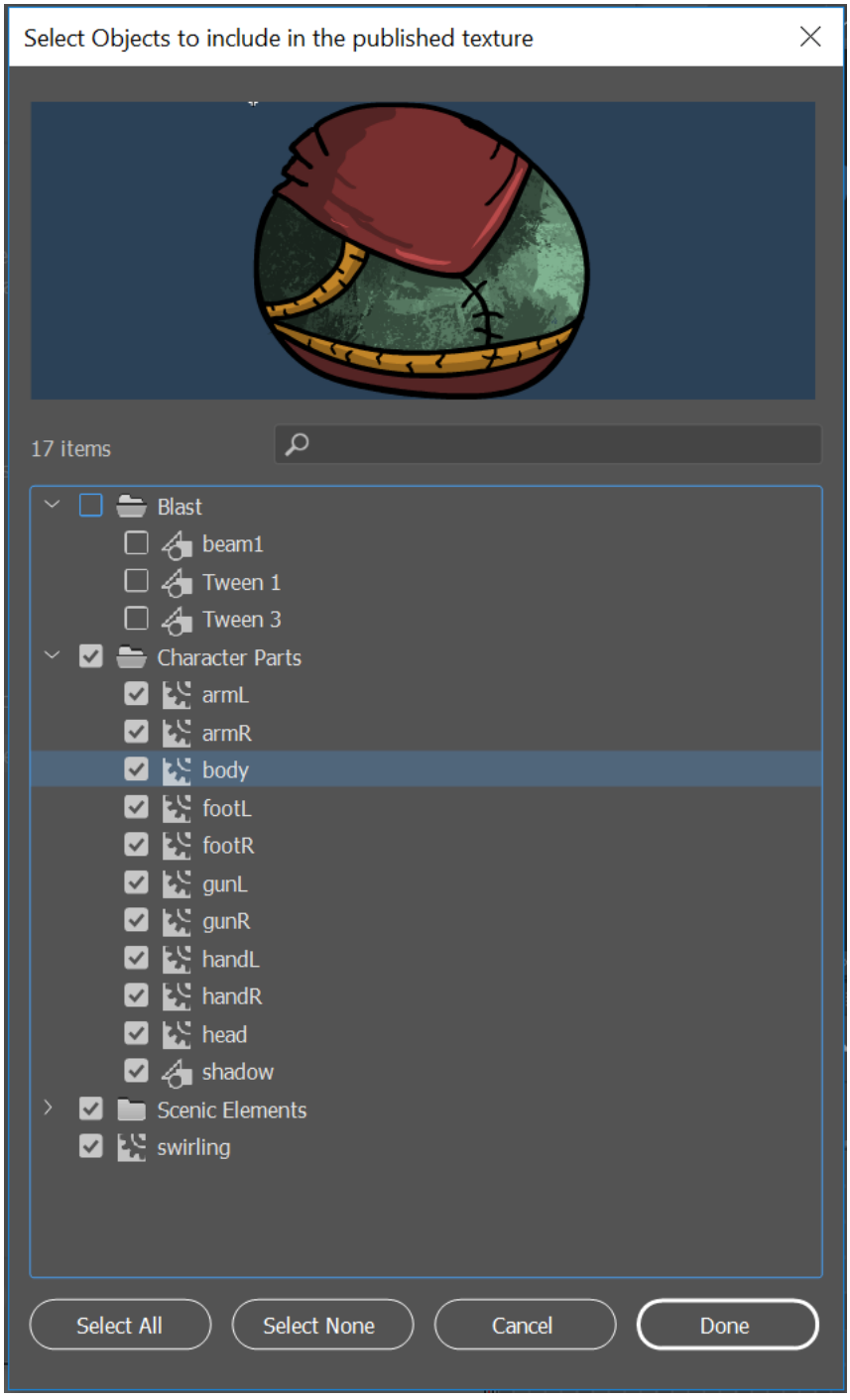
Choosing a vector or raster file is like a choice between file sizes and performance. HTML5 platforms are optimized for raster content. So, for some complex shapes, it is better to pre-convert vector images to raster. For some of the basic content, you can still use vector content. Animate provides this option to you through a partial symbol selection dialog. Partial symbol selection allows you to choose symbols that should be converted to raster while keeping the remaining as vectors.

To open partial symbol selection, click **Change** in **Publish settings** dialog and select a symbol from the list. By default, all symbols are selected.



Change partial symbol selection

Select the symbols of your choice from the list.



Partial symbol selection

A tutorial on Texture publishing

A tutorial on Texture publishing

Export QuickTime video files

Using Animate CC, you can create QuickTime® movies (MOV files) that can be played back by users who have the QuickTime plug-in installed on their computers. This is often done when people use Animate to create title sequences or animation for use as video content. The published QuickTime file can be distributed as a DVD, or incorporated into other applications such as Adobe® Director® or Adobe® Premiere® Pro.

If you are creating a QuickTime video using Animate, set your publish setting to Flash Professional 3, 4, or 5.

Note:

The QuickTime Player does not support Flash Player files later than version 5.

Controlling external video playback with ActionScript

Playing external FLV or F4V files dynamically

An alternative to importing video into the Animate authoring environment is to use either the FLVPlayback component or ActionScript to dynamically play external FLV or F4V files in Flash Player. You can also use the FLVPlayback component and ActionScript together.

You can play FLV or F4V files posted as HTTP downloads or as local media files. To play back an external FLV or F4V file, post an FLV or F4V file to a URL (either an HTTP site or a local folder) and add either the FLVPlayback component or ActionScript code to the Animate document to access the file and control playback during runtime.

Using external FLV or F4V files provides the following capabilities that are not available when using imported video:

- You can use longer video clips without slowing down playback. External FLV or F4V files are played using cached memory, which means that large files are stored in small pieces and accessed dynamically; they do not require as much memory as embedded video files.
- An external FLV or F4V file can have a different frame rate from the Animate document in which it plays. For example, you can set the Animate document frame rate to 30 fps and the video frame rate to 21 fps, which gives you greater control in ensuring smooth video playback.
- With external FLV or F4V files, Animate document playback does not have to be interrupted while the video file is loading. Imported video files can sometimes interrupt document playback to perform certain functions (for example, to access a CD-ROM drive). FLV or F4V files can perform functions independently of the Animate document, and so do not interrupt playback.
- Captioning video content is easier with external FLV or F4V files because you can use callback functions to access metadata for the video.

Behaviors used in video playback

Video behaviors provide one way to control video playback. Behaviors are prewritten ActionScript scripts that you add to a triggering object to control another object. Behaviors add the power, control, and flexibility of ActionScript coding to your document without having to create the ActionScript code. Video behaviors play, stop, pause, rewind, fast-forward, show, and hide a video clip.

To control a video clip with a behavior, use the Behaviors panel to apply the behavior to a triggering object, such as a movie clip. Specify the event that triggers the behavior (such as releasing the movie clip), select a target object (the video that is affected by the behavior), and when necessary, select settings for the behavior, such as the number of frames to rewind.

Note:

The triggering object must be a movie clip. You cannot attach video playback behaviors to button symbols or button components.

The following behaviors in Animate control embedded video:

Behavior	Purpose	Parameters
Play Video	Plays a video in the current document.	Instance name of target video
Stop Video	Stops the video.	Instance name of target video
Pause Video	Pauses the video.	Instance name of target video
Rewind Video	Rewinds the video by the specified number of frames.	Instance name of target video Number of frames
Fast Forward Video	Fast-forwards the video by the specified number of frames.	Instance name of target video Number of frames
Hide Video	Hides the video.	Instance name of target video
Show Video	Shows the video.	Instance name of target video

Control video playback using behaviors

1. Select the movie clip to trigger the behavior.
2. In the Behaviors panel (Window > Behaviors), click the Add (+) button, and select the desired behavior from the Embedded Video submenu.
3. Select the video to control.
4. Select a Relative or Absolute path.
5. If required, select settings for the behavior parameters and click OK.
6. In the Behaviors panel under Event, click On Release (the default event) and select a mouse event. To use the On Release event, leave the option unchanged.

The FLVPlayback component

The FLVPlayback component lets you include a video player in your Animate application to play progressively downloaded video (FLV or F4V) files over HTTP, or play streaming FLV files from Adobe Media Server (AMS) or a Flash Video Streaming Service (FVSS).

The FLVPlayback component does the following:

- Provides a set of prefabricated skins to customize playback controls and the look and feel of the user interface.
- Lets advanced users create their own custom skins.
- Provides cue points to synchronize your video with the animation, text, and graphics in your Animate application.
- Provides live preview of customizations.
- Maintains a reasonably sized SWF file for easy download.

The FLVPlayback component is the display area in which you view video. The FLVPlayback component includes the FLV Custom UI controls, a set of control buttons that play, stop, pause, and control playback the video.

Configure the FLVPlayback component

1 With the FLVPlayback component selected on the stage, open the Property inspector (Window > Properties) and enter an instance name.

2 Select Parameters in the Property inspector or open the Component inspector (Window > Components).

3 Enter values for parameters or use default settings.

For each FLVPlayback component instance you can set the following parameters in the Property inspector or in the Component inspector:

Note:

In most instances, it is not necessary to alter the settings in the FLVPlayback component unless you want to change the appearance of a video skin. The Video Import wizard sufficiently configures the parameters for most deployments.

autoPlay Boolean value that determines how to play the FLV or F4V. If *true*, the video plays immediately when it is loaded. If *false*, loads the first frame and pauses. The default value is *true*.

autoRewind Boolean value that determines whether the video is automatically rewound. If *true*, the FLVPlayback component automatically rewinds the video to the beginning when the playhead reaches the end or when the user clicks the stop button. If *false*, the component does not automatically rewind the video. The default value is *true.*

autoSize Boolean value that, if *true*, resizes the component at runtime to use the source video dimensions. The default value is *false*.

***note**: The encoded frame size of the video is not the same as the default dimensions of the FLVPlayback component.*

bufferTime Number of seconds to buffer before beginning playback. The default value is 0.

contentPath (AS2 files) String that specifies the URL to an FLV, F4V, or to an XML file that describes how to play the video. Double-click the Value cell for this parameter to activate the Content Path dialog box. The default is an empty string. If you do not specify a value for the *contentPath* parameter, nothing happens when Animate executes the FLVPlayback instance.

source (AS3 files) String that specifies the URL to an FLV, F4V, or to an XML file that describes how to play the video. Double-click the Value cell for this parameter to activate the Content Path dialog box. The default is an empty string. If you do not specify a value for the *contentPath* parameter, nothing happens when Animate executes the FLVPlayback instance.

isLive Boolean value that, if *true*, specifies that the video is streaming live from FMS. The default value is *false*.

cuePoints A string that specifies the cue points for the video. Cue points allow you to synchronize specific points in the video with Animate animation, graphics, or text. The default value is an empty string.

maintainAspectRatio A Boolean value that, if *true*, resizes the video player in the FLVPlayback component to retain the source video aspect ratio; the source video is still scaled and the FLVPlayback component itself is not resized. The *autoSize* parameter takes precedence over this parameter. The default value is *true*.

skin A parameter that opens the Select Skin dialog box and allows you to choose a skin for the component. The default value is None. If you choose None, the FLVPlayback instance does not have control elements that allow the user to play, stop, or rewind the video, or take other actions that the controls make possible. If the *autoPlay* parameter is set to true, the video plays automatically. For more information, see "Customizing the FLVPlayback component" in *Using ActionScript 3.0 Components* or *ActionScript 2.0 Components Language Reference*.

totalTime Total number of seconds in the source video. The default value is 0. If you use progressive download, Animate uses this number if it is set to a value greater than zero (0). Otherwise, Animate tries to take the time from metadata.

note: If you're using FMS or FVSS, this value is ignored; the total time of the video is taken from the server.

volume A number from 0 to 100 that represents the percentage of maximum volume at which to set the volume.

Specify the contentPath or source parameter

If you imported a local video clip into Animate for use with progressively downloaded or streaming video content, update the *contentPath* (AS2 FLA files) or *source* (AS3 FLA files) parameter of the FLVPlayback component before uploading your content to a web server or Adobe Media Server. The *contentPath* or *source* parameter specifies the name and location of the video file on the server, and implies the playback method (for example, progressively downloading using HTTP, or streaming from Adobe Media Server using RTMP).

1 With the FLVPlayback component selected on the Stage, open the Property inspector (Window > Properties) and select Parameters in the Property inspector, or open the Component inspector (Window > Component Inspector).

2 Enter values for parameters, or use the default settings as appropriate. For the *contentPath* or *source* parameter, do the following: a) Double-click the Value cell for the *contentPath* or *source* parameter to activate the Content Path dialog box. b) Enter the URL or local path to the FLV or F4V file, or the XML file (for Adobe Media Server or FVSS) that describes how to play the video.

   If you do not know the location of the video or XML file, click the folder icon to navigate to the correct location. When browsing for an video file, if it is at or below the location of the target SWF file, Animate automatically makes the path relative to that location so that it is ready for serving from a web server. Otherwise, it is an absolute Windows or Macintosh file path.

   If you specify an HTTP URL, the video file is a progressive download FLV or F4V file. If you specify a URL that is a Real-Time Messaging Protocol (RTMP) URL, the video streams from a Adobe Media Server (AMS). A URL to an XML file could also be a streaming video file from AMS or from FVSS.

   Note:

   When you click OK on the Content Path dialog box, Animate updates the value of the cuePoints parameter, too, because you might have changed the contentPath parameter so that the cuePoints parameter no longer applies to the current content path. As a result, you lose any disabled cue points, although not ActionScript cue points. For this reason, you may want to disable non-ActionScript cue points through ActionScript, rather than through the Cue Points dialog box.

   When you specify the *contentPath* or *source* parameter, Animate attempts to verify that the video you specified is compatible with Flash Player. If you see a warning dialog box, try re-encoding the video to FLV or F4V format with Adobe Media Encoder.

   You can also specify the location of an XML file that describes how to play multiple video streams for multiple bandwidths. The XML file uses Synchronized Multimedia Integration Language (SMIL) to describe the video files. For a description of the XML SMIL file, see "Using a SMIL file" in the ActionScript 2.0 Components Language Reference.

Media components (Flash Player 6 and 7)

Note:

The media components were introduced in Macromedia Flash MX Professional 2004 and are intended for use with Flash Player 6 or 7. If you are developing video content to use with Flash Player 8, instead use the FLVPlayback component introduced in Version 8. The FLVPlayback component provides improved functionality, giving you more control over video playback in the Animate environment.

The media component suite consists of three components: MediaDisplay, MediaController, and MediaPlayback. With the MediaDisplay component, to add media to your Animate documents, drag the component to the Stage and configure it in the Component inspector. In addition to setting the parameters in the Component inspector, you can add cue points to trigger other actions. The MediaDisplay component has no visual representation during playback; only the video clip is visible.

The MediaController component provides user interface controls that let the user interact with streaming media. The Controller features Play, Pause, and Rewind to Start buttons and a volume control. It also includes playbars that show how much of the media has loaded and how much has played. A playhead slider can be dragged forward and backward on the playbar to navigate quickly to different parts of the video. Using behaviors or ActionScript, you can easily link this component to the MediaDisplay component to show streaming video and provide user control.

The MediaPlayback component provides the easiest and quickest way to add video and a controller to your Animate documents. The MediaPlayback component combines the MediaDisplay and MediaController components into a single, integrated component. The MediaDisplay and MediaController component instances are automatically linked to each other for playback control.

To configure parameters for playback, size, and layout for all three components, use the Component inspector or the Parameters tab in the Property inspector. All the media components work equally well with mp3 audio content.

For more information on the media components, “Media components,” in the ActionScript 2.0 Components Language Reference.

Best practices - Tips for creating content for mobile devices

Creating Animate content for use on mobile devices

To create Animate content for mobile devices, follow some basic principles. For example, Animate developers often avoid extremely complex artwork and excessive tweening or transparency.

Flash Lite developers face additional challenges because performance on mobile devices varies greatly. If content must be published to many different devices, developers sometimes have to author for the lowest common denominator.

Optimizing mobile content requires making trade-offs. For example, one technique may make the content look better, while another results in better performance. As you evaluate these trade-offs, you will be going back and forth repeatedly between testing in the emulator and testing on the target device. You must see your content on the actual device to evaluate the trueness of colors, text readability, physical interactions, UI responsiveness, and other aspects of the real mobile experience.

Note:

The content about Flash Lite is not applicable for Flash CC and higher versions.

Flash Lite guidelines for animation in mobile devices

When creating animated content for a mobile devices, keep device CPU limitations in mind. Following these guidelines can help prevent**Flash Lite** content from running slowly:

- When creating a new **Flash Lite** file, check that the document is set up correctly. Although Animate files scale smoothly, performance can suffer if the file is not running at its native Stage size and has to scale in the player. Try to set the document Stage size to match the resolution of the target device. Also set the Flash Player to the correct version of **Flash Lite**.
- **Flash Lite** can render vector graphics at low, medium, and high quality. The higher the rendering quality, the more smoothly and accurately **Flash Lite** renders vector graphics and the greater the demand on the device's CPU. To provide complex animation, experiment with changing the player's quality setting and then thoroughly test the SWF file. To control the rendering quality of a SWF file, use the *_quality* property or the *SetQuality* command. Valid values for the *_quality* property are *LOW*, *MEDIUM*, and *HIGH*.
- Limit the number of simultaneous tweens. Reduce the number of tweens, or sequence the animation so that one begins when another ends.
- Use transparency (alpha) effects on symbols sparingly because they are CPU intensive. In particular, avoid tweening symbols with alpha levels that are not fully opaque (less than 100%).
- Avoid CPU-intensive visual effects, such as large masks, extensive motion, alpha blending, extensive gradients, and complex vectors.
- Experiment with combinations of tweens, keyframe animations, and ActionScript-driven movement to produce the most efficient results.
- Rendering vector ovals and circles is much more memory intensive than rendering quadrangles. Using round and oval strokes also greatly increases CPU use.
- Test animations frequently on actual target devices.
- When Animate draws an animated region, it defines a rectangular bounding box around the area. Optimize the drawing by making that rectangle as small as possible. Avoid overlapping tweens, because Animate interprets the merged area as a single rectangle, resulting in a larger total region. Use Animate's Show Redraw Region feature to optimize the animation.
- Avoid using *_alpha = 0* and *_visible = false* to hide on-screen movie clips. If you simply turn a movie clip's visibility off or change its alpha to zero, it is still included in line-rendering calculations, which can affect performance.
- Similarly, do not try to hide a movie clip by obscuring it behind another piece of artwork. It will still be included in the player's calculations. Instead, move movie clips completely off the Stage or remove them by calling *removeMovieClip*.

Flash Lite bitmap and vector graphics in mobile devices

Flash Lite can render both vector and bitmap graphics. Each type of graphic has its advantages and disadvantages. The decision to use vector rather than bitmap graphics is not always clear and often depends on several factors.

Vector graphics are compactly represented in SWF files as mathematical equations and rendered at run time by the **Flash Lite** player. In contrast, bitmap graphics are represented as arrays of picture elements (pixels), which require more bytes of data. Therefore, using vector graphics in a file can help reduce file size and memory usage.

Vector graphics also maintain their smooth shapes when scaled in size. Bitmap images can appear boxy, or pixelated, when scaled.

Compared to bitmaps, vector graphics require more processing power to render, especially vector graphics that have many complex shapes and fills. Consequently, heavy use of vector shapes can sometimes reduce overall file performance. Because bitmap graphics do not require as much processing time to render as vector graphics, they are better choice for some files, for example, a complex road map meant to be animated and scrolled on a mobile phone.

Keep these considerations in mind:

- Avoid using outlines on vector shapes. Outlines have an inner and outer edge (fills have only one) and are twice the work to render.
- Corners are simpler to render than curves. When possible, use flat edges, especially with very small vector shapes.
- Optimization is especially helpful with small vector shapes such as icons. Complex icons may lose their details upon rendering, and the work of rendering the details is wasted.
- As a general rule, use bitmaps for small, complex images (such as icons) and vector graphics for larger and simpler ones.
- Import bitmap graphics at the correct size; don't import large graphics and scale them down in Animate, because this wastes file size and run-time memory.
- The **Flash Lite** player does not support bitmap smoothing. If a bitmap is scaled or rotated, it will have a chunky appearance. If it is necessary to scale or rotate a graphic, consider using a vector graphic instead.
- Text is essentially just a very complex vector shape. Of course, text is often critical, so it can rarely be avoided entirely. When text is needed, avoid animating it or placing it over an animation. Consider using text as a bitmap. For multiline dynamic and input text, the line break of the text string is not cached. Animate breaks lines at run time and recalculates the breaks every time the text field needs to be redrawn. Static text fields are not problematic, because the line breaking is precalculated at compile time. For dynamic content, using dynamic text fields is unavoidable, but when possible, consider using static text fields instead.
- Minimize the use of transparency in PNG files; Animate must calculate redraws even for the transparent portions of the bitmap. For example, with a transparent PNG file that represents a foreground element, don't export the transparent PNG at the full size of the screen. Instead, export it at the actual size of the foreground element.
- Try to group bitmap layers together and vector layers together. Animate needs to implement different renderers for bitmap and vector content, and switching between renderers takes time.

Set compression of Flash Lite bitmaps for mobile devices

When using bitmaps, you can set image-compression options (on a per-image basis or globally for all bitmap images) that reduce SWF file size.

Set compression options for an individual bitmap file

1. Start Animate and create a document.
2. Select a bitmap in the Library window.
3. Right-click (Windows) or Control-click (Macintosh) the bitmap icon in the Library window, and select Properties from the context menu to open the Bitmap Properties dialog box.
4. In the Compression pop-up menu, select one of the following options:
   - Select the Photo (JPEG) option for images with complex color or tonal variations, such as photographs or images with gradient fills. This option produces a JPEG file. Select the Use Imported JPEG Data check box to use the default compression quality specified for the imported image. To specify a new quality compression setting, deselect Use Imported JPEG Data and enter a value between 1 and 100 in the Quality text box. A higher setting produces an image of higher image, but also a larger file, so adjust the value accordingly.

- Select the Lossless (PNG/GIF) option for images with simple shapes and a few colors. This option compresses the image using lossless compression, which discards no data.

5 Click Test to determine the results of the file compression.

Compare the original file size to the compressed file size to decide whether the selected compression setting is acceptable.

Set compression for all bitmap images

1 Select File > Publish Settings, and then click the Flash tab to display compression options.

2 Adjust the JPEG quality slider, or enter a value. A higher JPEG quality value produces an image of higher image quality but a larger SWF file. A lower image quality produces a smaller SWF file. Try different settings to determine the best trade-off between size and quality.

Optimizing Flash Lite frames for mobile devices

- Most devices that support **Flash Lite**play back content at about 15 to 20 frames per second (fps). The frame rate can be as low as 6 fps. During development, set the document frame rate to approximate the playback speed of the target device. This shows how the content will run on a device with limited performance. Before publishing a final SWF file, set the document frame rate to at least 20 fps or higher to avoid limiting performance in case the device supports a higher frame rate.
- When using *gotoAndPlay*, remember that every frame between the current frame and the requested frame needs to be initialized before playing the requested frame. If many of these frames contain different content, it could be more efficient to use different movie clips rather than using the Timeline.
- Although preloading all content by putting it at the beginning of the file makes sense on the desktop, preloading on a mobile device can delay file startup. Space content throughout the file so that movie clips are initialized as they are used.

Optimizing ActionScript for Flash Lite content on mobile devices

Because of the processing speed and memory limitations on most mobile devices, follow these guidelines when developing ActionScript for **Flash Lite** content used on mobile devices:

- Keep the file and its code as simple as possible. Remove unused movie clips, delete unnecessary frame and code loops, and avoid too many frames or extraneous frames.
- Using *FOR* loops can be expensive because of the overhead incurred while the condition is checked with each iteration. When the costs of the iteration and the loop overhead are comparable, execute multiple operations individually instead of using a loop. The code may be longer, but performance will improve.
- Stop frame-based looping as soon as it is no longer needed.
- When possible, avoid string and array processing because it can be CPU-intensive.
- Always try to access properties directly rather than using ActionScript getter and setter methods, which have more overhead than other method calls.
- Manage events wisely. Keep event listener arrays compact by using conditions to check whether a listener exists (is not *null*) before calling it. Clear any active intervals by calling *clearInterval*, and remove any active listeners by calling *removeListener* before removing content using *unloadapplication* or *removeapplicationClip*. Animate does not re-collect SWF data memory (for example, from intervals and listeners) if any ActionScript functions are still referring to the SWF data when a movie clip is unloaded.

- When variables are no longer needed, delete them or set them to *null*, which marks them for garbage collection. Deleting variables helps optimize memory use during run time, because unneeded assets are removed from the SWF file. It is better to delete variables than to set them to *null*.
- Explicitly remove listeners from objects by calling *removeListener* before garbage collection.
- If a function is being called dynamically and passing a fixed set of parameters, use *call* instead of *apply*.
- Make namespaces (such as paths) more compact to reduce startup time. Every level in the package is compiled to an *IF* statement and causes a new *Object* call, so having fewer levels in the path saves time. For example, a path with the levels *com.xxx.yyy.aaa.bbb.ccc.funtionName* causes an object to be instantiated for *com.xxx.yyy.aaa.bbb.ccc*. Some Flash developers use preprocessor software to reduce the path to a unique identifier, such as *58923409876.functionName*, before compiling the SWF code.
- If a file consists of multiple SWF files that use the same ActionScript classes, exclude those classes from select SWF files during compilation. This can help reduce file download time and run-time memory requirements.
- Avoid using *Object.watch* and *Object.unwatch*, because every change to an object property requires the player to determine whether a change notification must be sent.
- If ActionScript code that executes on a keyframe in the timeline requires more than 1 second to complete, consider splitting up that code to execute over multiple keyframes.
- Remove *trace* statements from the code when publishing the SWF file. To do this, select the Omit Trace Actions check box on the Flash tab in the Publish Settings dialog box.
- Inheritance increases the number of method calls and uses more memory: a class that includes all the functionality it needs is more efficient at run time than a class that inherits some of its functionality from a superclass. Therefore, you may need to make a design trade-off between extensibility of classes and efficiency of code.
- When one SWF file loads another SWF file that contains a custom ActionScript class (for example, *foo.bar.CustomClass*) and then unloads the SWF file, the class definition remains in memory. To save memory, explicitly delete any custom classes in unloaded SWF files. Use the *delete* statement and specify the fully qualified class name, such as: *delete foo.bar.CustomClass.*
- Limit the use of global variables, because they are not marked for garbage collection if the movie clip that defined them is removed.
- Avoid using the standard user interface components (available in the Components panel in Flash). These components are designed to run on desktop computers and are not optimized to run on mobile devices.
- Whenever possible, avoid deeply nested functions.
- Avoid referencing nonexistent variables, objects, or functions. Compared to the desktop version of Flash Player, **Flash Lite** 2 looks up references to nonexistent variables slowly, which can significantly affect performance.
- Avoid defining functions using anonymous syntax. For example, *myObj.eventName = function{ ...}*. Explicitly defined functions are more efficient, such as *function myFunc { ...}; my Obj.eventName = myFunc;*.
- Minimize the use of Math functions and floating-point numbers. Calculating these values slows performance. If you must use the Math routines, consider precalculating the values and storing them in an array of variables. Retrieving the values from a data table is much faster than having Flash calculate them at run time.

Managing Flash Lite file memory for mobile devices

Flash Lite regularly clears from memory any objects and variables that a file no longer references. This is known as garbage collection. **Flash Lite** runs its garbage-collection process once every 60 seconds, or whenever usage of file memory increases suddenly by 20% or more.

Although you cannot control how and when **Flash Lite** performs garbage collection, you can still free unneeded memory deliberately. For timeline or global variables, use the *delete* statement to free the memory that ActionScript objects use. For local variables—for example, a variable defined within a function definition—you can't use the *delete* statement to free an object's memory, but you can set to *null* the variable that references the object. This frees the memory that the object uses, provided there are no other references to that object.

The following two code examples show how to free memory that objects use by deleting the variable that references those objects. The examples are identical, except that the first example creates a timeline variable and the second creates a global variable.

```
// First case: variable attached to a movie or
// movie clip timeline
//
// Create the Date object.
var mcDateObject = new Date();
// Returns the current date as a string.
trace(mcDateObject);
// Delete the object.
delete mcDateObject;
// Returns undefined.
trace(mcDateObject);
//
// Second case: global variable attached to a movie or
// movie clip timeline
//
// Create the Date object.
_global.gDateObject = new Date();
// Returns the current date as a string.
trace(_global.gDateObject);
// Delete the object.
delete _global.gDateObject;
// Returns undefined.
trace(_global.gDateObject);
```

As mentioned previously, you can't use the *delete* statement to free memory that a local function variable uses. Instead, set the variable reference to *null*, which has the same effect as using *delete*.

```
function func()
{
   // Create the Date object.
   var funcDateObject = new Date();
   // Returns the current date as a string.
   trace(funcDateObject);
   // Delete has no effect.
   delete funcDateObject;
   // Still returns the current date.
   trace(funcDateObject);
   // Set the object reference to null.
   funcDateObject = null;
   // Returns null.
   trace(funcDateObject);
}
// Call func() function.
func();
```

Loading data for mobile devices in Flash Lite

When developing files for mobile devices, minimize the amount of data you attempt to load at one time. If you are loading external data into a **Flash Lite** file (for example, using *XML.load*), the device's operating system may generate a "memory failure" error if insufficient memory is allocated for the incoming data. This situation can occur even if the total amount of remaining memory is sufficient.

For example, suppose a file attempts to load an XML file that's 100 KB, but the device's operating system has allocated only 30 KB to handle that incoming data stream. In this case, **Flash Lite**displays an error message to the user, indicating that not enough memory is available.

To load large amounts of data, group the data in smaller pieces—for example, in several XML files—and make several data-loading calls for each piece. The size of each piece of data, and therefore the number of data-loading calls you need to make, varies by device and file. To determine an appropriate balance between the number of data requests and the likelihood of a memory failure, test files on a variety of target devices.

For optimum performance, avoid loading and parsing XML files if possible. Instead, store data in simple name/value pairs and load the data from a text file using *loadVars* or from precompiled SWF files.

Exclude classes from compilation for Flash Lite

To reduce the size of a SWF file, consider excluding classes from compilation but retaining the ability to access and use them for type checking. For example, try this if you are developing a file that uses multiple SWF files or shared libraries, especially those that access many of the same classes. Excluding classes helps avoid duplicating classes in those files.

1. Create a new XML file.
2. Name the XML file FLA_filename_exclude.xml, where FLA_filename is the name of the FLA file without the .fla extension. For example, if the FLA file is sellStocks.fla, the XML filename must be sellStocks_exclude.xml.
3. Save the file in the same directory as the FLA file.
4. Place the following tags in the XML file:

```
<excludeAssets>
   <asset name="className1" />
   <asset name="className2" />
</excludeAssets>
```

   The values specified for the name attributes in the <*asset*> tags are the names of classes that should be excluded from the SWF file. Add as many as required for the file. For example, the following XML file excludes the *mx.core.UIObject* and *mx.screens.Slide* classes from the SWF file:

```
<excludeAssets>
   <asset name="mx.core.UIObject" />
   <asset name="mx.screens.Slide" />
</excludeAssets>
```

Best practices - Video conventions

About video conventions

Many options are available to edit video before you import it into a FLA document, or load an FLV file into a SWF file. Animate and Adobe Media Encoder have greater controls for video compression. Compressing video carefully is important because it controls the quality of the video footage and the size of the file. Video files, even when compressed, are large in comparison with most other assets in your SWF file.

Note:

Provide the user with control over the media in a SWF file. For example, if you add audio to a document with video (or even a looping background sound), let the user control the sound.

Using video in an application

Before you import video into Animate, consider what video quality you need, what video format to use with the FLA file, and how to download it. When you import video into a FLA file (called embedded video), it increases the size of the SWF file that you publish. This video starts progressively downloading to the user's computer whether or not they view the video.

You can also progressively download or stream the video at runtime from an external FLV file on your server. When it starts downloading depends on how you structure your application.

Note:

Video progressively downloads from the server like SWF files, which is not actually streaming. Dynamically loading content has distinct advantages over keeping all your content in a single SWF file. For example, you will have smaller files and quicker loading, and the user only downloads what they want to see or use in your application.

You can display external FLV video using a component or a video object. A component makes developing applications with FLV video easy, because the video controls are prebuilt, and you only need to specify an FLV file path to play the content. To keep your SWF file as small as possible, display video in a video object and create your own assets and code to control the video. Also consider using the FLVPlayback component in Adobe Animate, which has a smaller file size than Media components (MX Professional 2004 and later).

It is a good idea to give users some control (such as the ability to stop, pause, play, and resume the video, and control volume) over the video in a SWF file.

To gain certain kinds of flexibility over your video, such as manipulating the video with animation, or syncing various parts of it with the timeline, embed the video in the SWF file rather than loading it using ActionScript or one of the Media components.

For more control over a video instance than the Video class allows, place video inside a movie clip instance. The video's timeline plays independently from a Animate timeline, and you can place the content inside a movie clip to control timelines. You do not have to extend your main Timeline by many frames to accommodate for the video, which can make working with your FLA file difficult.

Troubleshooting video

You can create an application and then encounter problems after you upload it to your server.

- Check that your Flash Player version is correct.

  For example, if you encoded your files using On2 codec, you need Flash Player 8 or later installed for the browsers you use to view your Animate content.

  note: For Flash Player and FLV compatibility, see About Using FLV Video in Learning ActionScript 2.0.

- Check that your server supports the mime type for the video files you are using, FLV or F4V. For more information on video files on a server, see Configuring your server for FLV files in Learning ActionScript 2.0.
- Check security guidelines.

  If you load FLV files from another server, make sure that you have the proper files or code in place to load from that external server. For information on policy files, see Server-side policy files for permitting access to data in Learning ActionScript 2.0. For information about loading and security, see Understanding security in Learning ActionScript 2.0.
- Check your target paths to your video are correct. If you use relative paths (such as /video/water.flv), try using absolute paths (such as http://www.helpexamples.com/flash/video/water.flv). If your application doesn't work as a relative path, but does work as an absolute path, correct the relative path.
- Check that the version of Flash Player you specified in the Publish Settings supports the type of video files you are using, either FLV or F4V (H.264).

Best practices - SWF application authoring guidelines

About SWF application guidelines

The best way to create Animate applications depends on the application you create and the technology that you are using to build the application.

An online application lets a user influence a website by interacting with it. For example, the application might collect information from the user (such as a username and password for a registration), information might be added to the site (such as in a forum), or the user might interact in real time with other site visitors (such as a chat room or interactive white board). Results from the server often appear in the SWF file, depending on the interaction. These examples are applications that involve the user and different kinds of server interaction. A website that does not use visitor information or data is not an application (for example, a portfolio, cartoon animation, or static informational site). Animate applications involve an interactive process between the user, a web application, and a server. The basic process is as follows:

1. A user enters information into a SWF file.
2. The information is converted into data.
3. The data is formatted and sent to a web server.
4. The data is collected by the web server and sent to an application server (for example, ColdFusion, PHP, or ASP).
5. The data is processed and sent back to the web server.
6. The web server sends the results to the SWF file.
7. The SWF file receives the formatted data.
8. Your ActionScript processes the data so the application can use it.

When you build an application, you must select a protocol for transferring data. The protocol alerts the application when data is sent or received, in what format the data is transferred, and how it handles a server's response. After data is received in the SWF file, it must be manipulated and formatted. If you use a protocol, you do not have to worry about data being in an unexpected format. When you transfer data using name-value pairs, you can check how the data is formatted. Check that the data is formatted correctly, so you do not receive XML formatted data and so the SWF file knows what data to expect and work with.

Collecting and formatting data

Applications depend on user interaction with the SWF file. Frequently, it depends on the user entering data into forms. Animate provides many ways you can enter and format data in Animate applications. This flexibility exists because of the capabilities you have with animation and creative control over the interface, and error checking and validation you can perform using ActionScript.

Benefits from using Animate to build forms to collect data include the following:

- Increased design control.
- Decreased or no need for page refreshing.
- Reuse of common assets.

***Tip**: To save information that you collect from the user, save it in a shared object on the user's computer. Shared objects let you store data on a user's computer, which is similar to using a cookie. For more information on Shared objects, see the sharedObject class in ActionScript 2.0 Language Reference or ActionScript 3.0 Language and Components Reference.*

Sending and processing data

You must typically process information before you send it to the server, so it's formatted in a way that the server understands. When the server receives the data, it can be manipulated in any number of ways and sent back to the SWF file in a format that it can accept, which can range from name-value pairs to complex objects.

Note:

Your application server must have the MIME type of its output set to application/x-www-urlform-encoded. If that MIME type is missing, the result is usually unusable when it reaches Animate.

The following table shows you several options for sending data to a server and receiving data using Animate:

Send data	Description
LoadVars.send and *LoadVars.sendAndLoad*	Sends name-value pairs to a server-side script for processing. *LoadVars.send* sends variables to a remote script and ignores any response. *LoadVar.sendAndLoad* sends name-value pairs to a server and loads or parses the response into a target *LoadVars* object.
XML.send and *XML.sendAndLoad*	Similar to *LoadVars*, but *XML.send* and *XML.sendAndLoad* send XML packets instead of name-value pairs.
getURL	Using the *getURL()* function or *MovieClip.getURL* method, you can send variables from Animate to a frame or pop-up window.
Remoting	Lets you easily exchange complex information between Animate and ColdFusion, ASP.NET, Java, and more. You can also use Animate Remoting to consume web services.
Web services	Adobe Animate includes the WebServiceConnector component that lets you connect to remote web services, send and receive data, and bind results to components. This lets Animate developers quickly create Rich Internet Applications without having to write a single line of ActionScript. You can consume remote web services by using WebServiceClasses, which can require writing complex ActionScript.

Adding data loading and validation

Validate any information you retrieve before you send that data to a server. This reduces strain on the remote server, because it does not handle as many requests when users do not fill in required fields. Never rely solely on client-side validation in any application; server-side validation must also occur.

Even if you build a simple registration or login form, check that the user has entered their name and password. Perform this validation before sending the request to the remote server-side script and waiting for a result. Do not rely only on server-side validation. If a user enters only a username, the server-side script must receive the request, validate the data being sent, and return an error message to the Animate application, stating that it requires both the username and password. Likewise, if validation is performed only on the client side (within the SWF file), a user might hack the SWF file, bypass the validation, and send data to your server in an attempt to post the bad data.

Client-side validation can be as simple as making sure that a form field is at least one character long, or that the user entered a numeric value and not a string. To validate an e-mail address, for example, check that the text field in Animate isn't empty and contains at least the at sign (@) and dot (.) characters. For the server-side validation, add more complex validation and check that the e-mail address belongs to a valid domain.

You must write ActionScript to handle the data that loads into the SWF file from the server. After you finish loading data into a SWF file, the data can be accessed from that location. Use ActionScript to check whether the data is fully loaded. You can use callback functions or listeners to send a signal that the data is loaded into the document.

When you load data, it can be formatted in several ways:

- You might load XML, in which case you use the XML class methods and properties to parse the data and use it. If you use name-value pairs, the pairs turn into variables and you can manipulate them as variables.
- You might receive data from a web service or from Animate Remoting.

In both cases, you could receive complex data structures, such as arrays, objects, or record sets, which you must parse and bind appropriately.

Using error handling and debugging

Your application needs to be robust enough to anticipate certain errors and handle them accordingly.

One of the best ways to perform error handling in ActionScript 2.0 is to use the *try-catch-finally* blocks that let you throw and catch custom errors. By creating custom error classes, you can reuse code throughout your application without having to rewrite error handling code. For more information on throwing custom errors, see the *Error* class in *ActionScript 2.0 Language Reference*. For more information on *try-catch-finally* blocks, see *try..catch..finally* in *ActionScript 2.0 Language Reference*.

In ActionScript 3.0, use the *flash.errors* class to catch errors.

For more information, see "Handling synchronous errors in an application" in *Programming ActionScript 3.0*.

Organizing files and storing code

Consider the following guidelines before you start organizing files and storing code:

- Do you divide the SWF file into multiple SWF files, and, if so, how should they interact?
- What assets can you share across SWF files?
- What files do you dynamically load?
- How and where do you store ActionScript?

When you develop an application, store your server-side code and files in a logical directory structure, similar to those in an ActionScript package. Arrange your code this way to keep it well organized and reduce the risk of the code being overwritten.

For larger applications, encapsulate client-server communication and services in classes. When you use classes, you benefit in the following ways:

- You can reuse the code in more than one SWF file.
- You can edit code in a central place, and update all SWF files by republishing them.
- You can create a single API that can manipulate different UI elements or other assets that perform similar functions.

Using the MVC design pattern

The MVC design pattern is used to separate the information, output, and data processing in the application. The application is divided into three elements: model, view, and controller; each element handles a different part of the process.

The model Incorporates the data and rules of the application. Much of the application's processing occurs in this part of the design pattern. The model also contains any components (such as CFCs, EJBs, and web services), and the database. Data returned is not formatted for the interface (or front end) of the application in this part of the process. The returned data can be used for different interfaces (or views).

The view Handles the front end of the application (the interface with which the user interacts), and renders the model's contents. The interface specifies how the model's data is presented and outputs the view for the user to use, and lets the user access or manipulate the application's data. If the model changes, the view updates to reflect those changes by either pushing or pulling data (sending or requesting data). If you create a hybrid web application (for example, one that includes Animate interacting with other applications on the page), consider the multiple interfaces as part of the view in the design pattern. The MVC design pattern supports handling a variety of views.

The controller Handles the requirements of the model and view to process and display data, and typically contains a lot of code. It calls any part of the model, depending on user requests from the interface (or view), and contains code that's specific to the application. Because this code is specific to the application, it is usually not reusable. However, the other components in the design pattern are reusable. The controller does not process or output any data, but it takes the request from the user and decides what part of the model or view components it needs to call, and determines where to send the data and what formatting is applied to the returned data. The controller ensures that views have access to parts of the model data that they must display. The controller typically transmits and responds to changes that involve the model and view.

Each part of the model is built as a self-contained component in the overall process. If you change one part of the model (for example, you might rework the interface), the other parts of the process do not usually need modification, which reduces problems. If your design pattern is created correctly, you can change the view without reworking the model or controller. If your application does not use MVC, making changes anywhere can cause a rippling effect across all your code, which requires many more changes than if you were using a specific design pattern.

An important reason to use the MVC pattern is to separate data and logic from the user interface. By separating these parts of the process, you can have several different graphical interfaces that use the same model and unformatted data. This means that you can use your application with different Animate interfaces, such as an interface for the web, one for Pocket PC, a version for cell phones, and perhaps an HTML version that doesn't use Animate at all. Separating data from the rest of the application can greatly reduce the time it takes to develop, test, and even update more than one client interface. Similarly, adding new front ends for the same application is easier if you have an existing model to use.

Only use MVC if you build a large or complex application, such as an e-commerce website or an e-learning application. Using the architecture requires planning and understanding how Animate and this design pattern work. Carefully

consider how the different pieces interact with each other; this typically involves testing and debugging. When you use MVC, testing and debugging are more involved and difficult than in typical Animate applications. If you build an application in which you need the additional complexity, consider using MVC to organize your work.

Creating secure applications

Dishonest users might try to hack your application, whether you build a small portal site where users can log in and read articles or a large e-commerce store. For this reason, consider the following steps to secure your application.

- Post data to HTTPS for data that needs to be secured. Encrypt values in Animate before sending them to a remote server to be processed.

  Note: Never store any information or code in a SWF file that you don't want users to see. It is easy to disassemble SWF files and view their contents using third-party software.

- Add a cross-domain policy, which prevents unauthorized domains from accessing your assets.

Best practices - Structuring FLA files

Organizing timelines and the library

Frames and layers on a timeline show you where assets are placed and determine how your document works. How a timeline and the library are set up and used affect the entire FLA file and its overall usability. The following guidelines help you author content efficiently, and let other authors who use your FLA documents have a greater understanding of how the document is structured.

- Give each layer an intuitive layer name, and place related assets together in the same location. Avoid using the default layer names (such as Layer 1, Layer 2).

  Clearly describe the purpose or content of each layer or folder when you name them.

  If applicable, place your layers that include ActionScript and a layer for frame labels at the top of the layer stack in the timeline. For example, name the layer that contains your ActionScript actions.

- Use layer folders to group and organize similar layers, to facilitate locating the layers that include code and labels.
- Lock layers that you are not using or do not want to modify. Lock your ActionScript layer immediately so that symbol instances or media assets are not placed on that layer.
- Never put any instances or assets on a layer that includes ActionScript. Because this can potentially cause conflicts between assets on the Stage and ActionScript that references them, keep all of your code on its own actions layer, and lock it after you create it.
- Use frame labels in a FLA file instead of using frame numbers in your ActionScript code if you reference frames in your code. If those frames change later when you edit the timeline, and you use frame labels and move them on the timeline, you do not have to change any references in your code.
- Use library folders.

  Use folders in the library to organize similar elements (such as symbols and media assets) in a FLA file. If you name library folders consistently each time you create a file, it is easier to remember where you put assets. Commonly used folder names are Buttons, MovieClips, Graphics, Assets, Components, and, sometimes, Classes.

Using scenes

Using scenes is similar to using several SWF files to create a larger presentation. Each scene has a timeline. When the playhead reaches the final frame of a scene, the playhead progresses to the next scene. When you publish a SWF file, the timeline of each scene combines into a single timeline in the SWF file. After the SWF file compiles, it behaves as if you created the FLA file using one scene. Because of this behavior, avoid using scenes for the following reasons:

- Scenes can make documents confusing to edit, particularly in multiauthor environments. Anyone using the FLA document might have to search several scenes within a FLA file to locate code and assets. Consider loading content or using movie clips instead.
- Scenes often result in large SWF files.
- Scenes force users to progressively download the entire SWF file, instead of loading the assets they actually want to see or use. If you avoid scenes, the user can control what content they download as they progress through your SWF file. The user has more control over how much content they download, which is better for bandwidth management. One drawback is the requirement for managing a greater number of FLA documents.
- Scenes combined with ActionScript might produce unexpected results. Because each scene timeline is compressed onto a single timeline, you might encounter errors involving your ActionScript and scenes, which typically requires extra, complicated debugging.

  If you create lengthy animations, you might find it advantageous to use scenes. If disadvantages apply to your document, consider using multiple FLA files, or movie clips to build an animation instead of using scenes.

Saving files and version control

When you save your FLA files, use a consistent naming scheme for your documents. This is particularly important if you save multiple versions of a single project.

note: The Project Panel is deprecated with Animate CC.

Some problems might occur if you only work with one FLA file and do not save versions when you create the file. Files might become larger because of the history that's saved in the FLA file, or become corrupt (as with any software you use) while you are working on the file.

If you save multiple versions while developing, you have an earlier version available if you need to revert.

Use intuitive names for your files that are easy to read, not cryptic, and work well online:

- Do not use spaces, capitalization, or special characters.
- Only use letters, numbers, dashes, and underscores.
- If you save multiple versions of the same file, devise a consistent numbering system such as menu01.swf, menu02.swf and so on.
- Consider using all lowercase characters in your naming schemes, because some server software is case sensitive.
- Consider a naming system that uses a noun-verb or adjective-noun combination for naming files, for instance, classplanning.swf and myproject.swf.

Use the following methods to save new versions of a FLA file when you build an extensive project:

- Select File > Save As, and save a new version of your document.
- Use version control software or the Project panel to control your Animate documents.

  note: The Project Panel is deprecated with Animate CC.

  If you are not using version control software to create backups of your FLA file, use Save As and type a new file name for your document after every milestone in your project.

Many software packages allow users to use version control with their files, which enables teams to work efficiently and reduce errors (such as overwriting files or working on old versions of a document). As with other documents, you can use these programs to organize the Animate documents outside Animate .

Best Practices to optimize FLA files for Animate CC

Optimize Animate documents

As your document file size increases, so does its download time and playback speed. You can take several steps to prepare your document for optimal playback. As part of the publishing process, Animate automatically performs some optimization on documents. Before exporting a document, you can optimize it further by using various strategies to reduce the file size. You can also compress a SWF file as you publish it. As you make changes, test your document by running it on a variety of computers, operating systems, and Internet connections.

Optimize documents

- Use symbols, animated or otherwise, for every element that appears more than once.
- Use tweened animations whenever possible when creating animation sequences. Tweened animations use less file space than a series of keyframes.
- Use movie clips instead of graphic symbols for animation sequences.
- Limit the area of change in each keyframe; make the action take place in as small an area as possible.
- Avoid animating bitmap elements; use bitmap images as background or static elements.
- Use mp3, the smallest sound format, whenever possible.

Optimize elements and lines

- Group elements.
- Use layers to separate elements that change during the animation from elements that do not.
- Use Modify > Shape > Optimize to minimize the number of separate lines that are used to describe shapes.
- Limit the number of special line types, such as dashed, dotted, ragged, and so on. Solid lines require less memory. Lines created with the Pencil tool require less memory than brush strokes.

Optimize text and fonts

- Limit the number of fonts and font styles. Use embedded fonts sparingly because they increase file size.
- For Embed Fonts options, select only the characters needed instead of including the entire font.

Optimize colors

- Use the Color menu in the Symbol Property inspector to create many instances of a single symbol in different colors.
- Use the Color panel (Window > Color) to match the color palette of the document to a browser-specific palette.
- Use gradients sparingly. Filling an area with gradient color requires about 50 bytes more than filling it with solid color.
- Use alpha transparency sparingly because it can slow playback.

Speed up document display

To speed up the document display, use commands in the View menu to turn off rendering-quality features that require extra computing and slow down document display.

None of these commands have any effect on how Animate exports a document. To specify the display quality of Animate documents in a web browser, use the *object* and *embed* parameters. The Publish command can do this for you automatically.

? Select View > Preview Mode, and select from the following options:

Outlines Displays only the outlines of the shapes in your scene and causes all lines to appear as thin lines. This makes it easier to reshape your graphic elements and to display complex scenes quickly.

Fast Turns off anti-aliasing and displays all the colors and line styles of your drawing.

Antialias Turns on anti-aliasing for lines, shapes, and bitmaps and displays shapes and lines so that their edges appear smoother on the screen. Draws more slowly than the Fast option. Anti-aliasing works best on video cards that provide thousands (16-bit) or millions (24-bit) of colors. In 16- or 256-color mode, black lines are smoothed, but colors might look better in Fast mode.

Antialias Text Smooths the edges of any text. Works best with large font sizes and can be slow with large amounts of text. This is the most common mode in which to work.

Full Renders all content on the Stage fully. Might slow down display.

Optimizing graphics and animation

Before you create optimized and streamlined animations or graphics, outline and plan your project. Make a target for the file size and length of the animation, and test throughout the development process.

Follow these guidelines to optimize graphics and animation:

- Avoid using gradients, because they require many colors and calculations to be processed, which is more difficult for a computer processor to render.
- For the same reason, keep the amount of alpha or transparency you use in a SWF file to a minimum.

  Animating objects that include transparency is processor-intensive and should be kept to a minimum. Animating transparent graphics over bitmaps is a particularly processor-intensive kind of animation, and must be kept to a minimum or avoided completely.

  note: The best bitmap format to import into Animate is PNG, which is the native file format of Macromedia Fireworks from Adobe. PNG files have RGB and alpha information for each pixel. If you import a Fireworks PNG file into Animate, you retain some ability to edit the graphic objects in the FLA file.
- Optimize bitmaps without overcompressing them. A 72-dpi resolution is optimal for the web. Compressing a bitmap image reduces file size, but compressing it too much compromises the quality of the graphic. Check that the settings for JPEG quality in the Publish Settings dialog box do not overcompress the image. Representing an image as a vector graphic is preferable in most cases. Using vector images reduces file size, because the images are made from calculations instead of many pixels. Limit the number of colors in your image while still retaining quality.

  note: Avoid scaling bitmaps larger than their original dimensions, because it reduces the quality of the image and is processor intensive.
- Set the *_visible* property to *false* instead of changing the *_alpha* level to 0 or 1 in a SWF file. Calculating the *_alpha* level for an instance on the Stage is processor intensive. If you disable the instance's visibility, it saves CPU cycles and memory, which can give your SWF files smoother animations. Instead of unloading and possibly reloading assets, set the *_visible* property to *false*, which is less processor-intensive.

- Reduce the number of lines and points you use in a SWF file. Use the Optimize Curves dialog box (Modify > Shape > Optimize) to reduce the number of vectors in a drawing. Select the Use Multiple Passes option for more optimization. Optimizing a graphic reduces file size, but compressing it too much compromises its quality. However, optimizing curves reduces your file size and improves SWF file performance. Third-party options are available for specialized optimization of curves and points that yield different results.

To get the best results, try different ways of producing animated content, and test each of the options.

A higher frame rate (measured in frames per second, or fps) produces smooth animation in a SWF file but it can be processor-intensive, particularly on older computers. Test your animations at different frame rates to find the lowest frame rate possible.

For a sample of scripted animation, see the Animate Samples web page at www.adobe.com/go/learn_fl_samples. Download and decompress the Samples zip file and navigate to the ActionScript2.0/Animation folder to access the sample.

Animation frame rate and performance

When you add animation to an application, consider the frame rate that you set your FLA file to. Frame rate can affect the performance of your SWF file and the computer that plays it. Setting a frame rate too high can lead to processor problems, especially when you use many assets or use ActionScript to create animation.

However, you also need to consider the frame rate setting, because it affects how smoothly your animation plays. For example, an animation set to 12 frames per second (fps) in the Property inspector plays 12 frames each second. If the document's frame rate is set to 24 fps, the animation appears to animate more smoothly than if it ran at 12 fps. However, your animation at 24 fps also plays faster than it does at 12 fps, so the total duration (in seconds) is shorter. Therefore, to make a 5-second animation using a higher frame rate, you must add additional frames to fill those five seconds than at a lower frame rate (and thus, raises the total file size of your animation). A 5-second animation at 24 fps typically has a higher file size than a 5-second animation at 12 fps.

Note:

When you use an onEnterFrame event handler to create scripted animations, the animation runs at the document's frame rate, similar to if you created a motion tween on a timeline. An alternative to the onEnterFrame event handler is setInterval (see ActionScript 2.0 Language Reference). Instead of depending on frame rate, you call functions at a specified interval. Like onEnterFrame, the more frequently you use setInterval to call a function, the more resource intensive the animation is on your processor.

Use the lowest possible frame rate that makes your animation appear to play smoothly at runtime, which helps reduce the strain on the end-user's processor. High frame rates (more than 30 to 40 fps) put a lot of stress on processors, and do not change the appearance of the animation much or at all at runtime.

Select a frame rate for your animation as early as possible in the development process. When you test the SWF file, check the duration, and the SWF file size, of your animation. The frame rate greatly affects the speed of the animation.

Filters and SWF file performance

If you use too many filters in an application, you can use large amounts of memory and cause Flash Player performance to suffer. Because a movie clip with filters attached has two bitmaps that are both 32-bit, these bitmaps can cause your application to use a significant amount of memory if you use many bitmaps. The computer's operating system might generate an out-of-memory error. On a modern computer, out-of-memory errors should be rare, unless you are using filter effects extensively in an application (for example, you have thousands of bitmaps on the Stage).

However, if you do encounter an out-of-memory error, the following occurs:

- The filters array is ignored.
- The movie clip is drawn using the regular vector renderer.
- No bitmaps are cached for the movie clip.

  After an out-of-memory error occurs, a movie clip never attempts to use a filters array or a bitmap cache. Another factor that affects player performance is the value that you use for the quality parameter for each filter that you apply. Higher values require more CPU and memory for the effect to render, whereas setting the quality parameter to a lower value requires fewer computer resources. Avoid using an excessive number of filters, and use a lower quality setting when possible.

  ***Note**: If a 100 pixel by 100 pixel object is zoomed in once, it uses four times the memory since the content's dimensions are now 200 pixels by 200 pixels. If you zoom another two times, the shape is drawn as an 800 pixel by 800 pixel object which uses 64 times the memory as the original 100 pixel by 100 pixel object. Whenever you use filters in a SWF file, disable the zoom menu options from the SWF file's context menu.*

  You can encounter errors if you use invalid parameter types. Some filter parameters also have a particular valid range. If you set a value that's outside of the valid range, the value changes to a valid value that's within the range. For example, quality should be a value from 1 to 3 for a standard operation, and can only be set to 0 to 15. Anything higher than 15 is set to 15.

  Some constructors have restrictions on the length of arrays required as input parameters. If a convolution filter or color matrix filter is created with an invalid array (not the right size), the constructor fails and the filter is not created successfully. If the filter object is then used as an entry on a movie clip's filters array, it is ignored.

  ***Tip**: When using a blur filter, using values for blurX and blurY that are powers of 2 (such as 2, 4, 8, 16, and 32) can be computed faster and give a 20% to 30% performance improvement.*

Bitmap caching and SWF file performance

Bitmap caching helps you enhance the performance of nonchanging movie clips in your applications. When you set the *MovieClip.cacheAsBitmap* or *Button.cacheAsBitmap* property to *true*, Flash Player caches an internal bitmap representation of the movie clip or button instance. This can improve performance for movie clips that contain complex vector content. All of the vector data for a movie clip that has a cached bitmap is drawn to the bitmap, instead of to the main Stage.

Note:

The bitmap is copied to the main Stage as unstretched, unrotated pixels snapped to the nearest pixel boundaries. Pixels are mapped one-to-one with the parent object. If the bounds of the bitmap change, the bitmap is re-created instead of being stretched.

For detailed information on caching button or movie clip instances see the following topics:

- About caching and scrolling movie clips with ActionScript in Learning ActionScript 2.0
- Caching a movie clip in Learning ActionScript 2.0

  Use the *cacheAsBitmap* property with movie clips with mostly static content and that do not scale and rotate frequently. With such movie clips, using the *cacheAsBitmap* property can lead to performance improvements when the movie clip is translated (when its *x* and *y* position is changed).

  Enabling caching for a movie clip creates a surface, which has several advantages, such as helping complex vector animations to render fast. In some situations, enabling caching does not improve performance, or even decrease it.

Overall performance of cached data depends on how complex the vector data of your instances are, how much of the data you change, and whether or not you set the opaqueBackground property. If you are changing small regions, the difference between using a surface and using vector data might be negligible. Test both scenarios with your work before you deploy the application.

When to use bitmap caching

The following are typical scenarios in which you might see significant benefits when you enable bitmap caching by optimizing vector graphics.

Complex background image An application that contains a detailed and complex background image of vector data. To improve performance, select the content, store it in a movie clip, and set the opaqueBackground property to true. The background is rendered as a bitmap and can be redrawn quickly, so that your animation plays faster.

Scrolling text field An application that displays a large amount of text in a scrolling text field. Place the text field in a movie clip that you set as scrollable with scrolling bounds (the scrollRect property), enabling fast pixel scrolling for the specified instance. When a user scrolls the movie clip instance, the scrolled pixels shift up and generate the newly exposed region instead of regenerating the entire text field.

Windowing system An application with a complex system of overlapping windows. Each window can be open or closed (for example, web browser windows). If you mark each window as a surface (set the cacheAsBitmap property to true), each window is isolated and cached. Users can drag the windows so that they overlap each other, and each window doesn't need to regenerate the vector content.

When to avoid using bitmap caching

Misusing bitmap caching can negatively affect your SWF file. When you develop a FLA file that uses surfaces, remember the following guidelines:

- Do not overuse surfaces (movie clips with caching enabled). Each surface uses more memory than a regular movie clip; only enable surfaces to improve rendering performance.
- A cached bitmap can use significantly more memory than a regular movie clip instance. For example, if the movie clip on the Stage is 250 pixels by 250 pixels, when cached it might use 250 KB instead of 1 KB when it's a regular (uncached) movie clip instance.
- Avoid zooming in on cached surfaces. If you overuse bitmap caching, a large amount of memory is consumed (see previous bullet), especially if you zoom in on the content.
- Use surfaces for movie clip instances that are largely static (nonanimating). You can drag or move the instance, but the contents of the instance should not animate or change a lot. For example, if you rotate or transform an instance, the instance changes between the surface and vector data, which is difficult to process and negatively affects your SWF file.
- If you mix surfaces with vector data, it increases the amount of processing that Flash Player (and sometimes the computer) needs to do. Group surfaces together; for example, when you create windowing applications.

Working with components in Flash Player

The component framework lets you add functionality to components, but it can potentially add considerable file size to an application. Components inherit from each other. One component adds size to your Animate document, but subsequent components that use the same framework do not necessarily add more size. As you add components to the Stage, the file size increases, but at some point, it levels off because components share classes and do not load new copies of those classes.

If you use multiple components that do not share the same framework, they might add substantial file size to the SWF file. For example, the XMLConnector component adds 17K to the SWF file, and TextInput components add 24K to your document. If you add the ComboBox component, it adds 28K, because it is not part of the framework of either previous component. Because the XMLConnector component uses data binding, the classes add 6K to the SWF file. A document that uses all these components has 77K before you add anything else to the file. Carefully consider your SWF file size when you add a new component to the document.

Components must exist in the parent SWF file's library. For example, an application must have a copy of the components it uses in its library, even if those components are required only by child SWF files that are loaded at runtime. This is necessary to ensure that the components function properly, and slightly increases the download time of the parent SWF file. However, the parent library isn't inherited or shared in the SWF files that you load into the parent. Each child SWF file must download to the application with its own copy of the same components.

When you are planning to publish a SWF file with backward compatibility, you must have a good understanding of which components have that capability. The following table provides information about component availability in different versions of Flash Player:

Components	Flash Player 6 (6.0.65.0) and earlier	Flash Player 6 (6.0.65.0)	Flash Player 7 and 8	Flash Player 9
ActionScript 3.0	Not supported	Not supported	Not supported	Supported
ActionScript 2.0	Supported	Supported	Supported	Supported
V2 UI component set	Not supported	Supported	Supported	Supported
Media components	Not supported	Not supported	Supported	Supported
Data components	Not supported	Not supported	Supported	Supported

Deselect the Optimize for Flash Player 6r65 option in Publish Settings for the V2 UI components to work.

Optimizing component styles and performance

When using ActionScript 2.0, one of the most processor-intensive calls in a component framework is the *setStyle* call. The *setStyle* call executes efficiently, but the call is intensive because of the way it is implemented. The *setStyle* call is not always necessary in all applications, but if you use it, consider its performance effect.

To enhance performance, you can change styles before they are loaded, calculated, and applied to the objects in your SWF file. If you can change styles before the styles are loaded and calculated, you do not have to call *setStyle*.

To improve performance when using styles, set properties on each object as objects are instantiated. When you dynamically attach instances to the Stage, set properties in *initObj* in the call that you make to *createClassObject()*, as the following ActionScript shows:

```
createClassObject(ComponentClass, "myInstance", 0, {styleName:"myStyle", color:0x99CCFF});
```

For instances that you place directly on the Stage, you can use *onClipEvent()* for each instance, or you can use subclasses (recommended). For information on subclasses, see About writing a subclass in Learning ActionScript 2.0.

If you must restyle your components, you can improve efficiency in your application by using the Loader component. To implement several styles in different components, place each component in its own SWF file. If you change styles on the Loader component and reload the SWF file, the components in the SWF file are recreated. When the component is recreated, the cache of styles is emptied, and the style for the component is reset and referenced again.

Note:

To apply a single style to all instances of a component in your SWF file, change the style globally using _global.styles.ComponentName.

Using runtime shared libraries

You can sometimes improve download time by using runtime shared libraries. These libraries are usually necessary for larger applications or when numerous applications on a site use the same components or symbols. By externalizing the common assets of your SWF files, you do not download classes repeatedly. The first SWF file that uses a shared library has a longer download time, because both the SWF file and the library load. The library caches on the user's computer, and then all the subsequent SWF files use the library. This process can greatly improve download time for some larger applications.

Displaying special characters

Computer operating systems have a specific code page that is regional. For example, a computer in Japan has a different code page than a computer in England. Flash Player 5 and earlier versions relied on the code page to display text; Flash Player 6 and later versions use Unicode to display text. Unicode is more reliable and standardized for displaying text because it is a universal character set that contains characters for all languages. Most current applications use Unicode.

You can use Unicode escape sequences to display special characters in Flash Player 6 and later. However, not all your characters display correctly if you do not load text that is UTF-8 or UTF-16 encoded (Unicode) or if you do not use a Unicode escape sequence to display the special character. For a set of Unicode code charts, see the Unicode web site at Unicode.org. For a list of commonly used escape sequences, see the table that follows in this section.

A non-Unicode application uses the operating system's code page to render characters on a page. In this case, the code page specifies the characters you see, so the characters appear correctly only when the code page on the user's operating system matches the application's code page. The code page that was used to create the SWF file needs to match the code page on the end user's computer. Using code pages is not a good idea for applications that an international audience might use; in this case, use Unicode instead.

Using *System.useCodepage* in your code forces the SWF file to use the system's code page instead of Unicode.

Only use this process when you are loading non-Unicode encoded text from an external location and when this text is encoded with the same code page as the user's computer. If both these conditions are true, the text appears without a problem. If both of these conditions are not true, use Unicode and a Unicode escape sequence to format your text. To use an escape sequence, add the following ActionScript 2.0 on Frame 1 of the Timeline:

```
this.createTextField("myText_txt", 99, 10, 10, 200, 25);
myText_txt.text = "this is my text, \u00A9 2004";
```

This ActionScript creates a text field, and enters text that includes a copyright symbol (©) into the text field.

You can make a SWF file use the operating system's code page, which is controlled by the *useCodepage* property. When Animate exports a SWF file, it defaults to exporting Unicode text and *System.useCodepage* is set to *false*. You might encounter problems displaying special text, or text on international systems, where using the system's code page can seem to solve the problem of text incorrectly displaying. However, using *System.useCodePage* is always a last resort.

To use the system's code page, place the following line of ActionScript 2.0 code on Frame 1 of the Timeline:

```
System.useCodepage = true;
<< need an AS3 example here as well. See
dev/qa. >>
```

Note:

A special character can appear only if the user's computer has the character included in the font that is being used. If you are not sure, embed the character or font in the SWF file.

The following table contains a number of commonly used Unicode escape sequences.

Character description	Unicode escape sequence
em-dash (—)	\u2014
registered sign (®)	\u00AE
copyright sign (©)	\u00A9
trademark sign (™)	\u2122
Euro sign (€)	\u20AC
backslash (\\)	\u005C
forward slash (/)	\u002F
open curly brace ({)	\u007B
close curly brace (})	\u007D
greater than (<)	\u003C
less than (>)	\u003E
asterisk (*)	\u002A

Test document download performance

Flash Player attempts to meet the frame rate you set; the actual frame rate during playback can vary on different computers. If a document that is downloading reaches a particular frame before the frame's required data is downloaded, the document pauses until the data arrives.

To view downloading performance graphically, use the Bandwidth Profiler, which shows how much data is sent for each frame according to the modem speed you specify.

note: (Animate CC only) Bandwidth Profiler is unavailable with Animate CC. You can choose to use Adobe Scout with Animate, instead. See Using Adobe Scout with Animate for more information.

In simulating the downloading speed, Animate uses estimates of typical Internet performance, not the exact modem speed. For example, if you select to simulate a modem speed of 28.8 Kbps, Animate sets the actual rate to 2.3 Kbps to reflect typical Internet performance. The profiler also compensates for the added compression support for SWF files, which reduces the file size and improves streaming performance.

When external SWF files, GIF and XML files, and variables are streamed into a player by using ActionScript calls such as *loadMovie* and *getUrl*, the data flows at the rate set for streaming. The stream rate for the main SWF file is reduced based on the reduction of bandwidth that the additional data requests cause. Test your document at each speed and on each computer that you plan to support to ensure that the document doesn't overburden the slowest connection and computer for which it is designed.

You can also generate a report of frames that are slowing playback and then optimize or eliminate some of the content in those frames.

To change the settings for the SWF file created using the Test Movie and Test Scene commands, use File > Publish Settings.

Test download performance

1 Do one of the following:

- Select Control > Test Scene or Control > Test.

  If you test a scene or document, Animate publishes the current selection as a SWF file using the settings in the Publish Settings dialog box. The SWF file opens in a new window and begins playing immediately.

- Select File > Open, and select a SWF file.

2 Select View > Download Settings, and select a download speed to determine the streaming rate that Animate simulates. To enter a custom user setting, select Customize.

3 When viewing the SWF file, select View > Bandwidth Profiler to show a graph of the downloading performance.

The left side of the profiler displays information about the document, its settings, its state, and streams, if any are included in the document.

The right section of the profiler shows the Timeline header and graph. In the graph, each bar represents an individual frame of the document. The size of the bar corresponds to that frame's size in bytes. The red line beneath the Timeline header indicates whether a given frame streams in real time with the current modem speed set in the Control menu. If a bar extends above the red line, the document must wait for that frame to load.

note: (Animate CC only) Bandwidth Profiler is unavailable with Animate CC. You can choose to use Adobe Scout with Animate, instead. See Using Adobe Scout with Animate for more information.

4 Select View > Simulate Download to turn streaming off or on.

If you turn streaming off, the document starts over without simulating a web connection.

note: (Animate CC only) The Simulate Download option is unavailable with Animate CC.

5 Click a bar on the graph to show settings for the corresponding frame in the left window and stop the document.

6 If necessary, adjust the view of the graph by taking one of the following actions:

- Select View > Streaming Graph to show which frames cause pauses.

  This default view displays alternating light and dark gray blocks that represent each frame. The side of each block indicates its relative byte size. The first frame stores a symbol's contents, so it is often larger than other frames.

- Select View > Frame by Frame Graph to display the size of each frame.

  This view helps you see which frames contribute to streaming delays. If any frame block extends above the red line in the graph, Flash Player stops playback until the entire frame downloads.

7 Close the test window to return to the authoring environment.

After you set up a test environment using the Bandwidth Profiler, you can open any SWF file directly in the test environment. The file opens in a Flash Player window, using the Bandwidth Profiler and other selected viewing options.

note: (Animate CC only) Bandwidth Profiler is unavailable with Animate CC. You can choose to use Adobe Scout with Animate, instead. See Using Adobe Scout with Animate for more information.

Generate a final report

1 Select File > Publish Settings, and click the Animate tab.

2 Select Generate Size Report.

3 Click Publish.

Animate generates a text file with the .txt extension. (If the document file is myMovie.fla, the text file is myMovie Report.txt.) The report lists the size of each frame, shape, text, sound, video and ActionScript script by frame.

Best practices - Behaviors conventions

About behaviors conventions

Behaviors are prewritten ActionScript 2.0 code that you can add to parts of a FLA file. Many developers enter ActionScript code either into one or several frames on the main Timeline or in external ActionScript files. However, when you use behaviors, sometimes code is placed directly on symbol instances (such as buttons, movie clips, or components) instead of being placed on the timeline.

Behaviors are not supported by ActionScript 3.0.

Comparing timeline code with object code

To avoid problems that decentralized ActionScript 2.0 code creates, carefully plan a document that uses behaviors. Many developers do not place ActionScript on symbol instances, and instead place their code on the Timeline (timeline code) or in classes. Because behaviors add code to many locations in a FLA file, your ActionScript is not centralized and can be difficult to locate. When code is not centralized, it is difficult to understand interactions between the snippets of code, and it is impossible to write elegant code. Decentralized code can potentially lead to problems debugging code or editing files.

If you use behaviors, try the following features to facilitate working with behaviors and decentralized ActionScript:

Script Navigator Makes your timeline code or code on individual objects easy to find and edit in the Actions panel.

Find And Replace Lets you search for strings and replace them in a FLA file.

Script Pinning Lets you pin multiple scripts from various objects and work with them simultaneously in the Actions panel. This method works best with the Script navigator.

Movie Explorer Lets you view and organize the contents of a FLA file, and select elements (including scripts) for further modification.

When to use behaviors

The main difference between a FLA file with behaviors and a FLA file without behaviors is the workflow you must use for editing the project. If you use behaviors, you must select each instance on the Stage, or select the Stage, and open the Actions or Behaviors panel to make modifications. If you write your own ActionScript and put all your code on the main Timeline, you only have to make your changes on the Timeline.

If you have a FLA file with symbols, you can select one of the instances on the Stage, and use the Add menu on the Behaviors panel to add a behavior to that instance. The behavior you select automatically adds code that attaches to the instance, using "object code" such as the *on()* handler. You can also select a frame on a timeline, and add different behaviors to a frame using the Behaviors panel.

Decide how to structure your FLA file. Examine how and where to use behaviors and ActionScript in your FLA file. Consider the following questions:

- What code do the behaviors contain?

- Do you have to modify the behavior code? If so, by how much? To modify the behavior code to any extent, do not use behaviors. You usually cannot edit behaviors by using the Behaviors panel if you make modifications to the ActionScript. To significantly edit the behaviors in the Actions panel, it is usually easier to write all of the ActionScript yourself in a centralized location.
- What other ActionScript do you need, and does other ActionScript have to interact with the behavior code? Debugging and modifications are easier to make from a central location. For example, if code on a timeline interacts with behaviors placed on objects, avoid behaviors.
- How many behaviors do you have to use, and where do you plan to put them in the FLA file? If your behaviors are all placed on a timeline, they might work well in your document. Or, your workflow might not be affected if you use only a small number of behaviors. However, if you use many behaviors on a lot of object instances, writing your own code on the Timeline or in external ActionScript files might be more efficient.

Remember, ActionScript 3.0 does not support behaviors.

Using behaviors consistently

Use behaviors consistently throughout a document when they are your main or only source of ActionScript. Use behaviors when you have little or no additional code in the FLA file, or have a consistent system in place for managing the behaviors that you use.

If you add ActionScript to a FLA file, put code in the same locations where behaviors are added, and document how and where you add code.

For example, if you place code on instances on the Stage (object code), on the main Timeline (frame scripts), and also in external AS files, examine your file structure. Your project will be difficult to manage if you have code in all of these places. However, if you logically use behaviors and structure your code to work in a particular way surrounding those behaviors (place everything on object instances), at least your workflow is consistent. The document will be easier to modify later.

Sharing files that use behaviors

If you plan to share your FLA file with other users and you use ActionScript placed on or inside objects (such as movie clips), it can be difficult for those users to find your code's location, even when they use the Movie Explorer to search through the document.

Document the use of behaviors if you are working with a complex document. Depending on the size of the application, create a flow chart, list, or use good documentation comments in a central location on the main Timeline.

If you are creating a FLA file with code placed in many locations throughout the document and plan to share the file, leave a comment on Frame 1 on the main Timeline to tell users where to find the code and how the file is structured. The following example shows a comment (on Frame 1) that tells users the location of the ActionScript:

```
/*
   ActionScript placed on component instances and inside movie clips using behaviors.
   Use the Movie Explorer to locate ActionScript
*/
```

Note:

This technique is not necessary if your code is easy to find, the document is not shared, or all of your code is placed on frames of the main Timeline.

ActionScript publish settings

Modify ActionScript publish settings

When you create a new FLA document, Animate CC (formerly Flash Professional CC) asks you which version of ActionScript you want to use. You can change this setting if you decide later to write your scripts in a different version of ActionScript.

Note:

ActionScript 3.0 is not compatible with ActionScript 2.0. The ActionScript 2.0 compiler can compile all ActionScript 1.0 code, except for the slash (/) syntax used to indicate movie clip paths (for example, parentClip/testMC:varName= "hello world"). To avoid this problem, either rewrite your code using dot (.) notation, or select the ActionScript 1.0 compiler.

1. Select File > Publish Settings.
2. Select the ActionScript version from the Script menu.

Class files and configuration files

When you install Animate, several ActionScript-related configuration folders and files are placed on your system. If you modify these files to customize the authoring environment, back up the original files.

ActionScript classes folder Contains all of the built-in ActionScript 2.0 classes (AS files). Typical paths to this folder are as follows:

- Windows 7 and 8: Hard Disk\Program Files\Adobe\Adobe Animate CC\Common\Configuration\ActionScript 3.0\Configuration\Classes
- Macintosh: Hard Disk/Users/user/Library/Application Support/Adobe/Animate CC/language/Configuration/Classes

  The Classes folder is organized into classes for Flash Player 10 and classes for Flash Player 11. For more information on the organization of this directory, see the Read Me file in the Classes folder.

Include class folder Contains all of the global ActionScript include files. Locations are as follows:

- Windows 7 and 8: Hard Disk\Program Files\Adobe\Adobe Animate CC\Common\Configuration\ActionScript 3.0\libs\
- Macintosh: Hard Disk/Users/user/Library/Application Support/Adobe/Animate CC/language/Configuration/Include

ActionsPanel.xml configuration file Includes the configuration file for ActionScript code hinting. Separate files provide configuration for each version of ActionScript and Flash Lite, and for JavaScript. Locations are as follows:

- Windows 7 and 8: Hard Disk\Program Files\Adobe\Adobe Animate CC\Common\Configuration\ActionScript 3.0\libs\
- Macintosh: Hard Disk/Users/user/Library/Application Support/Adobe/Animate CC/language/Configuration/ActionsPanel

AsColorSyntax.xml configuration file The configuration file for ActionScript code color syntax highlighting. Locations are as follows:

- Windows 7 and 8: Hard Disk\Program Files\Adobe\Adobe Animate CC\Common\Configuration\ActionScript 3.0\libs\

- Macintosh: Hard Disk/Users/user/Library/Application Support/Adobe/Animate CC/language/Configuration/ActionsPanel

Declare an ActionScript 3.0 document class

When you use ActionScript 3.0, a SWF file may have a top-level class associated with it. This class is called the document class. When the SWF is loaded by Flash Player, an instance of this class is created to be the SWF file's top-level object. This object of a SWF file can be an instance of any custom class you choose.

For example, a SWF file that implements a calendar component can associate its top level with a Calendar class, with methods and properties appropriate to a calendar component. When the SWF is loaded, Flash Player creates an instance of this Calendar class.

1. Deselect all objects on the Stage and in the Timeline by clicking a blank area of the Stage. This displays the Document properties in the Property inspector.
2. Enter the filename of the ActionScript file for the class in the Document Class text box in the Property inspector. Do not include the .as filename extension.

Note:

You can also enter the Document Class information in the Publish Settings dialog box.

Note:

Optionally, you can also enter the name of the Class within a SWC file, linked in Library Path, that you want to set as the Document Class.

Set the location of ActionScript files

To use an ActionScript class that you've defined, Animate must locate the external ActionScript files that contain the class definition. The list of folders in which Animate searches for class definitions is called the classpath for ActionScript 2.0 and the source path for ActionScript 3.0. Classpaths and source paths exist at the application (global) and document level. For more information about classpaths, see Classes in Learning ActionScript 2.0 in Adobe Animate or "Packages" in Learning ActionScript 3.0.

You can set the following ActionScript locations in Animate:

- ActionScript 2.0
  - Application level (available to all AS2 FLA files):
    - Classpath (set in ActionScript preferences)
  - Document level (available only to the FLA file that specifies this path):
    - Classpath (set in Publish Settings)
- ActionScript 3.0
  - Application level (available to all AS3 FLA files):
    - Source path (set in ActionScript preferences)
    - Library path (set in ActionScript preferences)
    - External library path (set in ActionScript preferences)
  - Document level (available only to the FLA file that specifies these paths):
    - Source path (set in Publish Settings)
    - Library path (set in Publish Settings)

- Document class (set in Document Property inspector)

The Library path specifies the location of pre-compiled ActionScript code which resides in SWC files you have created. The FLA file that specifies this path loads every SWC file at the top level of this path and any other code resources that are specified within the SWC files themselves. If you use the Library path, be sure none of the compiled code in the SWC files is duplicated in uncompiled AS files in the Source path. The redundant code will slow down compilation of your SWF file.

You can specify more than one path for Animate to look in. Resources found in any of the paths specified will be used. When you add or modify a path, you can add absolute directory paths (for example, C:/my_classes) and relative directory paths (for example, ../my_classes or ".").

Set the classpath for ActionScript 2.0

Note: ActionScript 2.0 is deprecated with Animate CC. For more information, see this article

To set the document-level classpath:

1. Select File > Publish Settings, and click Flash.
2. Verify that ActionScript 2.0 is selected in the ActionScript Version pop-up menu, and click Settings.
3. Specify the frame where the class definition should reside in the Export Frame for Classes text field.
4. To add paths to the classpath list, do any of the following:
   - To add a folder to the classpath, click the Browse to Path button , browse to the folder to add, and click OK.
   - To add a new line to the Classpath list, click the Add New Path + button. Double-click the new line, type a relative or absolute path, and click OK.
   - To edit an existing classpath folder, select the path in the Classpath list, click the Browse to Path button, browse to the folder to add, and click OK. Alternatively, double-click the path in the Classpath list, type the desired path, and click OK.
   - To delete a folder from the classpath, select the path in the Classpath list and click the Remove Selected Path button −.

To set the application-level classpath:

1. Choose Edit Preferences (Windows) or Flash > Preferences (Macintosh) and click the ActionScript category.
2. Click the ActionScript 2.0 Settings button and add the path(s) to the Classpath list

Set the source path for ActionScript 3.0

To set the document-level source path:

1. Select File > Publish Settings, and click Flash.
2. Verify that ActionScript 3.0 is selected in the ActionScript Version pop-up menu, and click Settings. Your Flash Player version must be set to Flash Player 9 or later to use ActionScript 3.0.
3. Specify the frame where the class definition should reside in the Export Classes in Frame text field.
4. Specify the Errors settings. You can select Strict Mode and Warnings Mode. Strict Mode reports compiler warnings as errors, which means that compilation will not succeed if those types of errors exist. Warnings Mode reports extra warnings that are useful for discovering incompatibilities when updating ActionScript 2.0 code to ActionScript 3.0.
5. (Optional) Select Stage to automatically declare stage instances.
6. Specify ActionScript 3.0 or ECMAScript as the dialect to use. ActionScript 3.0 is recommended.

7 To add paths to the source path list, do any of the following:

- To add a folder to the source path, click the Source path tab and then click the Browse To Path button, browse to the folder to add, and click OK.
- To add a new line to the Source path list, click the Add New Path + button. Double-click the new line, type a relative or absolute path, and click OK.
- To edit an existing Source path folder, select the path in the Source path list, click the Browse To Path button, browse to the folder to add, and click OK. Alternatively, double-click the path in the Source path list, type the desired path, and click OK.
- To delete a folder from the source path, select the path in the Source path list and click the Remove From Path button −.

To set the application-level source path:

1 Choose Edit Preferences (Windows) or Animate > Preferences (Macintosh) and click the ActionScript category.

2 Click the ActionScript 3.0 Settings button and add the path(s) to the Source path list.

Set the Library path for ActionScript 3.0 files

To set the document-level Library path, the procedure is similar to setting the Source path:

1 Choose File Publish Settings.

2 Make sure ActionScript 3.0 is specified in the Script menu and click the ActionScript Settings button.

3 In the Advanced ActionScript 3.0 Settings dialog box, click the Library path tab.

4 Add the library path to the Library path list. You can add folders or individual SWC files to the path list.

5 To set the Link Type property, double-click Link Type in the property tree of the path. The choices for Link Type are:

- Merged into code: The code resources found in the path are merged into the published SWF file.
- External: The code resources found in the path are not added to the published SWF file, but the compiler verifies that they are in the locations you specified.
- Runtime shared library (RSL): Flash Player downloads the resources at runtime.

To set the Application-level Library path:

1 Choose Edit Preferences (Windows) or Animate > Preferences (Macintosh) and click the ActionScript category.

2 Click the ActionScript 3.0 Settings button and add the path(s) to the Library path list.

Compiling ActionScript conditionally

You can use conditional compilation in ActionScript 3.0 in the same way that it has been used in C++ and other programming languages. For example, you can use conditional compilation to turn blocks of code throughout a project on of off, such as code that implements a certain feature or code used for debugging.

Using config constants that you define in the publish settings, you can specify whether certain lines of ActionScript code are compiled or not. Each constant takes the following form:

CONFIG::SAMPLE_CONSTANT

In this form, *CONFIG* is the config namespace and *SAMPLE_CONSTANT* is the constant that you will set to true or false in the publish settings. When the value of the constant is true, the line of code that follows the constant in ActionScript is compiled. When the value is false, the line of code that follows the constant is not compiled.

For example, the following function has 2 lines of code that are compiled only if the value of the constant that precedes them is set to true in the publish settings:

```
public function CondCompTest() {
   CONFIG::COMPILE_FOR_AIR {
       trace("This line of code will be compiled when COMPILE_FOR_AIR=true.");
   }
   CONFIG::COMPILE_FOR_BROWSERS {
       trace("This line of code will be compiled when COMPILE_FOR BROWSERS=true.");
   }
}
```

To define a config constant using the Publish Settings dialog box:

1. Choose File > Publish Settings.
2. Ensure that the Script menu set to ActionScript 3.0 and click the Settings button next to the menu.
3. In the Advanced ActionScript 3.0 Settings dialog box, click the Config Constants tab.
4. To add a constant, click the Add button.
5. Type the name of the constant you want to add. The default config namespace is *CONFIG* and the default constant name is *CONFIG_CONST*.

   Note:

   The config namespace CONFIG is declared by the Animate compiler automatically. You can add your own config namespaces by entering them with a constant name in the publish settings and adding them to your ActionScript code using the following syntax:

   ```
   config namespace MY_CONFIG;
   ```

6. Enter the value you want for the constant, either true or false. You change this value in order to turn on or off compilation of specific lines of code.

Customizing context menus in documents (CS5.5)

You can customize the standard context menu and the text-editing context menu that appears with SWF files in Flash Player 7 and later.

- The standard context menu appears when a user right-clicks (Windows) or Control-clicks (Macintosh) on a SWF file in Flash Player, in any area except an editable text field. You can add custom items to the menu, and hide any built-in items in the menu except Settings and Debugger.
- The editing context menu appears when a user right-clicks (Windows) or Control-clicks (Macintosh) in an editable text field in a SWF file in Flash Player. You can add custom items to this menu. You cannot hide any built-in items.

Note:

Flash Player also displays an error context menu when a user right-clicks (Windows) or Control-clicks (Macintosh) in Flash Player and no SWF file is loaded. You cannot customize this menu.

Customize context menus in Flash Player 7 by using the ContextMenu and ContextMenuItem objects in ActionScript 2.0. For more information on using these objects, see *ContextMenu* in the *ActionScript 2.0 Language Reference*.

Remember the following conditions when creating custom context menu items for Flash Player:

- Custom items are added to a context menu in the order in which they are created. You cannot modify this order after the items are created.
- You can specify the visibility and enabling of custom items.

- Custom context menu items are automatically encoded using Unicode UTF-8 text encoding.

Configuration folders installed with Flash (CS5.5)

Flash places several configuration folders on your system when you install the application. The configuration folders organize files associated with the application into appropriate levels of user access. You may want to view the contents of these folders when you are working with ActionScript® or components. The configuration folders for Flash are as follows:

Application-level configuration folder

Because it is in the application level, non-administrative users do not have write access to this directory. Typical paths to this folder are as follows:

- In Microsoft Windows XP or Microsoft Windows Vista, browse to *boot drive*\Program Files\Adobe\Adobe Flash CS3*language*\Configuration\.
- On the Macintosh, browse to *Macintosh HD*/Applications/Adobe Flash CS3/Configuration/.

First Run folder

This sibling to the application-level configuration folder facilitates sharing configuration files among users of the same computer. Folders and files in the First Run folder are automatically copied to the user-level configuration folder. Any new files placed in the First Run folder are copied to the user-level configuration folder when you start the application.

Typical paths to the First Run folder are as follows:

- In Windows XP or Vista, browse to *boot drive*\Program Files\Adobe\Adobe Flash CS3*language*\First Run\.
- On the Macintosh, browse to *Macintosh HD*/Applications/Adobe Flash CS3/First Run/.

User-level configuration folder

Found in the user profile area, this folder is always writable by the current user. Typical paths to this folder are as follows:

- In Windows XP or Vista, browse to *boot drive*\Documents and Settings*username*\Local Settings\Application Data\Adobe\Flash CS3*language*\Configuration.
- On the Macintosh, browse to *Macintosh HD*/Users/*username*/Library/Application Support/Adobe/Flash CS3/*language*/Configuration/.

All-user-level configuration folder

Found in the common user profile area, this folder is part of the standard Windows and Macintosh operating system installations and is shared by all users of a particular computer. The operating system makes available to all users of the computer any files placed in this folder. Typical paths to this folder are as follows:

- In Windows XP or Vista, browse to *boot drive*\Documents and Settings\All Users\Application Data\Adobe\Flash CS3*language*\Configuration\.
- On the Macintosh, browse to *Macintosh HD*/Users/Shared/Application Support/Adobe/Flash CS3/*language*/Configuration/.

Restricted Users configuration folder

For users with restricted privileges on a workstation, typically, in a networked environment, only system administrators have administrative access to workstations. All other users are given restricted access, which usually means that these users can't write to application-level files (such as the Program Files directory in Windows or the Applications folder in Macintosh OS X).

Specify publish settings for Animate

Specify publish settings for an HTML5 Canvas document

For information about Publish Settings for an HTML5 Canvas document, see this article.

Specify publish settings for SVG files

For information about Publish Settings for exporting an SVG file, see this article.

Specify publish settings for a WebGL document

For information about Publish Settings for a WebGL document, see this article.

Specify publish settings for AIR applications

Android

For information about Publish Settings for Android, see this article.

iOS

For information about Publish Settings for iOS, see How to package applications for AIR for iOS.

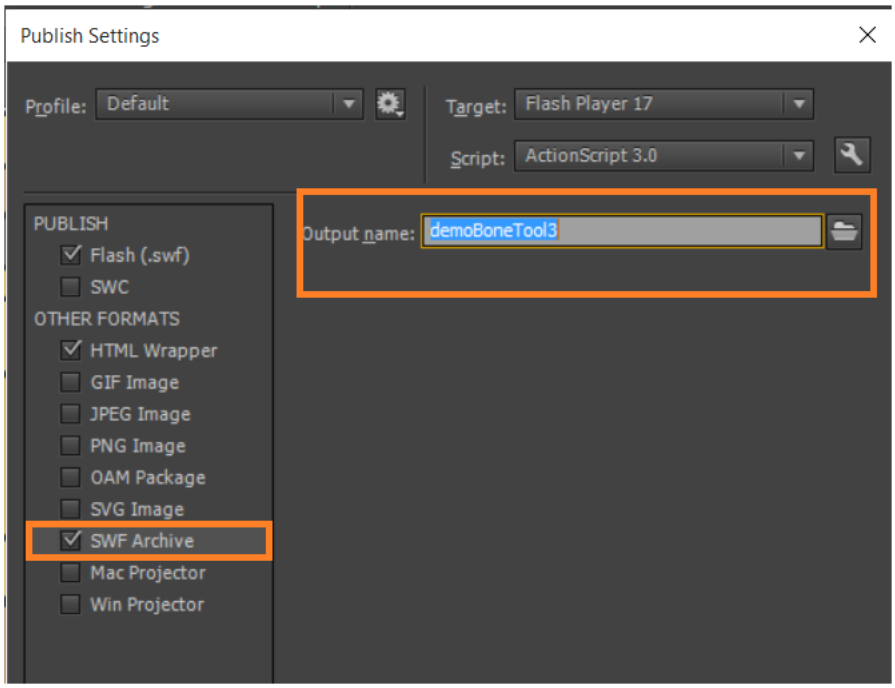
Desktop

For information about Publish Settings for iOS, see About Adobe AIR.

Publish Layers as SWF archive

Previously when animators created animation, they had to manually create and edit the SWF file for each layer and import to After Effects. From this release onwards, Animate introduces a new publish format, SWF archive, that packages the different layers as independent SWFs and imported to Adobe After Effects.

1 Select an ActionScript document > File > Publish settings > Other formats > SWF archive.



Publish SWF archive

2 Browse and select the locally saved SWF archive file in the Output name field. An archive file is generated with a zip file. It combines SWF file of all the layers into a single zip file. The naming convention of the zipped file is prefixed with a 4-digit number, underscore and the layer name.

Specify publish settings for Animate (.swf) files

Note:

CS5.5 only - You can also specify the Publish settings for Player version and ActionScript version in the Property inspector. Deselect all items on Stage to display the Document properties in the Property inspector.

1 Select File > Publish Settings, and select a Player version from the Player pop-up menu. Not all features work in published SWF files that target Flash Player versions earlier than Flash Player 10. To specify Flash Player detection, click the HTML Wrapper category in the left column and select Detect Flash Version and enter Flash Player version to detect.

Note: In Flash Pro CS5.5, the Flash Player 10.2 setting creates a SWF file using version 11 of the SWF format. The Flash Player 10 & 10.1 setting creates a SWF file using version 10 of the format.

2 Select the ActionScript® version from the Script pop-up menu. If you select ActionScript 2.0 or 3.0 and you've created classes, click the ActionScript Settings button to set the relative classpath to class files that differ from the default directory path set in Preferences.

Note: With Animate CC, only ActionScript 3.0 is supported.

3 To control bitmap compression, click the Animate category in the left column and adjust the JPEG Quality value. Lower image quality produces smaller files; higher image quality produces larger files. Try different settings to determine the best trade-off between size and quality; 100 provides the highest quality and least compression.

To make highly compressed JPEG images look smoother, select Enable JPEG Deblocking. This option reduces typical artifacts resulting from JPEG compression, such as the common appearance of 8x8-pixel blocking of the image. Some JPEG images may lose a small amount of detail when this option is selected.

4 To set the sample rate and compression for all streaming sounds or event sounds in the SWF file, click the values next to Audio Stream or Audio Event and select options as needed.

Note:

A streaming sound plays as soon as enough data for the first few frames downloads; it is synchronized to the Timeline. An event sound does not play until it downloads completely, and it continues to play until explicitly stopped.

5 To override settings for individual sounds specified in the Sound section of the Property inspector, select Override Sound Settings. To create a smaller, low-fidelity version of a SWF file, select this option.

Note:

If the Select Override Sound Settings option is deselected, Animate scans all streaming sounds in the document (including sounds in imported video) and publishes all stream sounds at the highest individual setting. This can increase file size if one or more stream sounds has a high export setting.

6 To export sounds suitable for mobile devices, instead of the original library sound, select Export Device Sounds. Click OK.

7 To set Advanced settings, select any of the following options:

Compress Movie (on by Default) Compresses the SWF file to reduce file size and download time.

Two compression modes are available:

- Deflate - This is the older compression mode that is compatible with Flash Player 6.x and later.
- LZMA - This mode is up to 40% more efficient than Deflate and is compatible only with Flash Player 11.x and later or AIR 3.x and later. LZMA compression is most beneficial for FLA files that contain a lot of ActionScript or vector graphics. When SWC is selected in Publish Settings, only Deflate compression is available.

Include Hidden Layers (Default) Exports all hidden layers in the Animate document. Deselecting Export Hidden Layers prevents all layers (including layers nested inside movie clips) marked as hidden from being exported in the resulting SWF. This lets you easily test different versions of Animate documents by making layers invisible.

Include XMP metadata (Default) Exports all metadata entered in the File Info dialog box. Click the Modify XMP Metadata button to open the dialog box. You can also open the File Info dialog box by choosing File > File Info. The metadata is viewable when the SWF file is selected in Adobe® Bridge.

Generate Size Report Generates a report listing the amount of data in the final Animate content by file.

Omit Trace Statements Causes Animate to ignore ActionScript *trace* statements in the current SWF file. When you select this option, information from *trace* statements does not appear in the Output panel.

Permit Debugging Activates the Debugger and allows remote debugging of a Animate SWF file. Lets you use password protection with your SWF file.

Protect From Import Prevents others from importing a SWF file and converting it back into a FLA document. Lets you use password protection with your Animate SWF file.

8 If you are using ActionScript 2.0, and selected either Permit Debugging or Protect From Import, enter a password in the Password text field. If you add a password, other users must enter the password before they can debug or import the SWF file. To remove the password, clear the Password text field and re-publish.

Note: ActionScript 1.0 and 2.0 is not supported with Animate CC.

9 To set a maximum time that scripts can take to execute in the SWF file, enter a value for the Script Time Limit. Flash Player cancels execution of any scripts that exceed the limit.

10 Select the Animate security model to use from the Local Playback Security pop-up menu. Specify whether to grant your published SWF file local or network security access.

Local Access Only Lets the published SWF file interact with files and resources on the local system but not on the network.

Access Network Only Lets the published SWF file interact with files and resources on the network but not on the local system

11 To enable the SWF file to use hardware acceleration, select one of the following options from the Hardware Acceleration menu:

Level 1 - Direct Direct mode improves playback performance by allowing Flash Player to draw directly on the screen instead of letting the browser do the drawing.

Level 2 - GPU In GPU mode, Flash Player utilizes the available computing power of the graphics card to perform video playback and compositing of layered graphics. This provides another level of performance benefit depending on the user's graphics hardware. Use this option when you expect that your audience will have high-end graphics cards.

If the playback system does not have sufficient hardware to enable acceleration, Flash Player reverts to normal drawing mode automatically. For best performance on web pages containing multiple SWF files, enable hardware acceleration for only one of the SWF files. Hardware acceleration is not used in Test Movie mode.

When you publish your SWF file, the HTML file that embeds it contains a *wmode* HTML parameter. Choosing Level 1 or Level 2 hardware acceleration sets the *wmode* HTML parameter to *"direct"* or *"gpu"* respectively. Turning on hardware acceleration overrides the Window Mode setting you may have chosen in the HTML tab of the Publish Settings dialog box, because it is also stored in the *wmode* parameter in the HTML file.

Specify publish settings for SWC files and projectors

A SWC file is used for distributing components. The SWC file contains a compiled clip, the component's ActionScript class file, and other files that describe the component.

Projectors are Animate files that contain both the published SWF and Flash Player. Projectors can play like an ordinary application, without the need for a web browser, the Flash Player plugin, or Adobe AIR.

- To publish a SWC file, select SWC from the left column of the Publish Settings dialog and click Publish.
- To publish a Windows Projector, select Win Projector from the left column and click Publish.
- To publish a Macintosh Projector, select Mac Projector from the left column and click Publish.

To save the SWC file or projector with a different file name that the original FLA file, enter a name for the Output File.

Specify publish settings for HTML wrapper files

Playing Animate content in a web browser requires an HTML document that activates the SWF file and specifies browser settings. The Publish command automatically generates this document from parameters in an HTML template document.

The template document can be any text file that contains the appropriate template variables—including a plain HTML file, a file that includes code for special interpreters such as ColdFusion® or Active Server Pages (ASP), or a template included with Animate.

To manually enter HTML parameters for Animate or customize a built-in template, use an HTML editor.

HTML parameters determine where the content appears in the window, the background color, the size of the SWF file, and so on, and set attributes for the *object* and *embed* tags. Change these and other settings in the HTML panel of the Publish Settings dialog box. Changing these settings overrides options you've set in the SWF file.

Specify the settings

1. Select File > Publish Settings and click the HTML Wrapper category from the left column of the dialog box.
2. Use the default filename, which matches the name of your document, or enter a unique name, including the .html extension.
3. To select an installed template to use, choose one from the Template pop-up menu. To show a description of the selected template, click Info. The default selection is the Animate Only template.
4. If you selected any HTML template other than Image Map, and you set the Flash Player version to 4 or later, select Animate Version Detection. For more information, see Specify publish settings for Flash Player detection.

   Note:

   Animate Version Detection configures your document to detect the version of Flash Player that the user has and sends the user to an alternative HTML page if the user does not have the targeted player. The alternative HTML page contains a link to download the latest version of Flash Player.

5. Select a Size option to set the values of the *width* and *height* attributes in the HTML *object* and *embed* tags:

   Match Movie (Default) Uses the size of the SWF file.

   Pixels Uses the Width and Height you specify. Enter the number of pixels for the width and height.

   Percent The SWF file occupies the percentage of the browser window that you specify. Enter the percentages for width and height that you want to use.

6. To control the SWF file's playback and features, select Playback options:

   Paused At Start Pauses the SWF file until a user clicks a button or selects Play from the shortcut menu. (Default) The option is deselected and the content begins to play as soon as it is loaded (the *PLAY* parameter is set to *true).*

   Loop Repeats the content when it reaches the last frame. Deselect this option to stop the content when it reaches the last frame. (Default) The *LOOP* parameter is on.

   Display Menu Shows a shortcut menu when users right-click (Windows) or Control-click (Macintosh) the SWF file. To show only About Animate in the shortcut menu, deselect this option. By default, this option is selected (the *MENU* parameter is set to *true).*

   Device Font (Windows only) Substitutes anti-aliased (smooth-edged) system fonts for fonts not installed on the user's system. Using device fonts increases the legibility of type at small sizes and can decrease the SWF file's size. This option affects only SWF files that contain static text (text that you create when authoring a SWF file and that does not change when the content appears) set to display with device fonts.

7. To determine the trade-off between processing time and appearance, as described in the following list, select Quality options. These options set the *QUALITY* parameter's value in the *object* and *embed* tags.

   Low Favors playback speed over appearance and does not use anti-aliasing.

   Auto Low Emphasizes speed at first but improves appearance whenever possible. Playback begins with anti-aliasing turned off. If Flash Player detects that the processor can handle it, anti-aliasing is automatically turned on.

   Auto High Emphasizes playback speed and appearance equally at first but sacrifices appearance for playback speed if necessary. Playback begins with anti-aliasing turned on. If the actual frame rate drops below the specified frame rate, anti-aliasing is turned off to improve playback speed. To emulate the View > Antialias setting, use this setting.

Medium Applies some anti-aliasing but does not smooth bitmaps. Medium produces a better quality than the Low setting but lower quality than the High setting.

High (Default) Favors appearance over playback speed and always uses anti-aliasing. If the SWF file does not contain animation, bitmaps are smoothed; if the SWF file contains animation, bitmaps are not smoothed.

Best Provides the best display quality and does not consider playback speed. All output is anti-aliased and bitmaps are always smoothed.

8 Select a Window Mode option, which controls the HTML *wmode* attribute in the *object* and *embed* tags. The window mode modifies the relationship of the content bounding box or virtual window with content in the HTML page as described in the following list:

Window (Default) Does not embed any window-related attributes in the *object* and *embed* tags. The background of the content is opaque and uses the HTML background color. The HTML code cannot render above or below the Animate content.

Opaque Windowless Sets the background of the Animate content to opaque, obscuring anything under the content. Lets HTML content appear above or on top of content.

Transparent Windowless Sets the background of the Animate content to transparent, allowing the HTML content to appear above and below the content.

If you turn on Hardware Acceleration in the Animate tab of the Publish Settings dialog box, the Window Mode you select is ignored and defaults to Window.

For a demonstration of setting the Window Mode, see the TechNote titled How to make a Flash movie with a transparent background.

Note:

In some instances, complex rendering in Transparent Windowless mode can result in slower animation when the HTML images are also complex.

Direct Uses the Stage3D render method, which uses the GPU whenever possible. When using Direct mode, it is not possible to layer other non-SWF graphics on top of the SWF file in the HTML page.

For a list of processors that do not support Stage3D, see http://kb2.adobe.com/cps/921/cpsid_92103.html.

9 To show error messages if tag settings conflict—for example, if a template has code referring to an alternative image that was not specified—select Show Warning Message.

10 To place the content within specified boundaries if you've changed the document's original width and height, select a Scale option. The Scale option sets the *SCALE* parameter in the HTML *object* and *embed* tags.

Default (Show All) Shows the entire document in the specified area without distortion while maintaining the original aspect ratio of the SWF files. Borders can appear on two sides of the application.

No Border Scales the document to fill the specified area and keeps the SWF file's original aspect ratio without distortion, cropping the SWF file if needed.

Exact Fit Shows the entire document in the specified area without preserving the original aspect ratio, which can cause distortion.

No Scale Prevents the document from scaling when the Flash Player window is resized.

11 To position the SWF file window in the browser window, select one of the following HTML Alignment options:

Default Centers the content in the browser window and crops edges if the browser window is smaller than the application.

Left, Right, or Top Align SWF files along the corresponding edge of the browser window and crop the remaining three sides as needed.

12 To set how the content is placed within the application window and how it is cropped, select the Flash Horizontal Alignment and Flash Vertical Alignment options. These options set the *SALIGN* parameter of the HTML *object* and *embed* tags.

Parameters and attributes for object and embed tags

The following tag attributes and parameters describe the HTML code that the Publish command creates. Refer to this list as you write custom HTML to show Animate content. Unless noted, all items apply to both the *object* and *embed* tags. Optional entries are noted. Internet Explorer recognizes parameters used with the *object* tag; Netscape recognizes the *embed* tag. Attributes are used with both the *object* and *embed* tags. When you customize a template, you can substitute a template variable (identified in the Value section for each parameter in the following list) for the value.

Note:

The attributes and parameters listed in this section are shown in lowercase to comply with the XHTML standard.

devicefont attribute/parameter (Optional) Specifies whether static text objects are rendered in device fonts, even if the Device Font option is not selected. This attribute applies when the necessary fonts are available from the operating system.

Value: *true* | *false*

Template variable: *$DE*

src attribute Specifies the name of the SWF file to be loaded. Applies to the *embed* tag only.

Value: *movieName.swf*

Template variable: *$MO*

movie parameter Specifies the name of the SWF file to be loaded. Applies to the *object* tag only.

Value: *movieName.swf*

Template variable: *$MO*

classid attribute Identifies the ActiveX control for the browser. The value must be entered exactly as shown. Applies to the *object* tag only.

Value: *clsid:d27cdb6e-ae6d-11cf-96b8-444553540000*

width attribute Specifies the width of the application either in pixels or as a percentage of the browser window.

Value: *n* or *n%*

Template variable: *$WI*

height attribute Specifies the height of the application either in pixels or as a percentage of the browser window.

Note:

Because Animate applications are scalable, quality doesn't degrade at different sizes if the aspect ratio is maintained. (For example, the following sizes all have a 4:3 aspect ratio: 640 x 480 pixels, 320 x 240 pixels, and 240 x 180 pixels.)

Value: *n* or *n%*

Template variable: *$HE*

codebase attribute Identifies the location of the Flash Player ActiveX control so that the browser can automatically download it if it is not already installed. The value must be entered exactly as shown. Applies to the *object* tag only.

Value: *http://fpdownload.adobe.com/pub/shockwave/cabs/flash/swflash.cab#version=7,0,0,0*

pluginspage attribute Identifies the location of the Flash Player plug-in so that the user can download it if it is not already installed. The value must be entered exactly as shown. Applies to the *embed* tag only.

Value: *http://www.adobe.com/shockwave/download/index.cgi?P1_Prod_Version=ShockwaveFlash*

swliveconnect attribute (Optional) Specifies whether the browser should start Java™ when loading Flash Player for the first time. The default value is *false* if this attribute is omitted. If you use JavaScript and Animate on the same page, Java must be running for the *fscommand()* function to work. However, if you use JavaScript only for browser detection or another purpose unrelated to *fscommand()* actions, you can prevent Java from starting by setting *SWLIVECONNECT* to *false*. To force Java to start when you are not using JavaScript, explicitly set the *SWLIVECONNECT* attribute to *true*. Starting Java substantially increases the startup time for a SWF file; set this tag to *true* only when necessary. Applies to the *embed* tag only.

Use the *fscommand()* action to start Java from a stand-alone projector file.

Value: *true* | *false*

play attribute/parameter (Optional) Specifies whether the application begins playing immediately on loading in the web browser. If your Animate application is interactive, let the user initiate play by clicking a button or performing another task. In this case, set the *play* attribute to *false* to prevent the application from starting automatically. The default value is *true* if this attribute is omitted.

Value: *true* | *false*

Template variable: *$PL*

loop attribute/parameter (Optional) Specifies whether the content repeats indefinitely or stops when it reaches the last frame. The default value is *true* if this attribute is omitted.

Value: *true* | *false*

Template variable: *$LO*

quality attribute/parameter (Optional) Specifies the level of anti-aliasing to be used. Because anti-aliasing requires a faster processor to smooth each frame of the SWF file before it is rendered on the viewer's screen, select one of the following values based on whether your priority is speed or appearance:

Low Favors playback speed over appearance and never uses anti-aliasing.

Autolow Emphasizes speed at first but improves appearance whenever possible. Playback begins with anti-aliasing turned off. If Flash Player detects that the processor can handle it, anti-aliasing is turned on. Note: SWF files authored using ActionScript 3.0 do not recognize the *autolow* value.

Autohigh Initially emphasizes playback speed and appearance equally, but sacrifices appearance for playback speed if necessary. Playback begins with anti-aliasing turned on. If the frame rate drops below the specified frame rate, anti-aliasing is turned off to improve playback speed. Use this setting to emulate the Antialias command (View > Preview Mode > Antialias).

Medium Applies some anti-aliasing and does not smooth bitmaps. It produces a better quality than the Low setting but a lower quality than the High setting.

High Favors appearance over playback speed and always applies anti-aliasing. If the SWF file does not contain animation, bitmaps are smoothed; if the SWF file has animation, bitmaps are not smoothed.

Best Provides the best display quality and does not consider playback speed. All output is anti-aliased, and all bitmaps are smoothed.

The default value for *quality* is *high* if this attribute is omitted.

Value: *low* | *medium* | *high* | *autolow* | *autohigh* | *best*

Template variable: *$QU*

bgcolor attribute/parameter (Optional) Specifies the background color of the application. Use this attribute to override the background color setting that the SWF file specifies. This attribute does not affect the background color of the HTML page.

Value: *#RRGGBB* (hexadecimal RGB value)

Template variable: *$BG*

scale attribute/parameter (Optional) Defines how the application is placed in the browser window when *width* and *height* values are percentages.

Showall (Default) Makes the entire content visible in the specified area without distortion while maintaining the original aspect ratio of the application. Borders can appear on two sides of the application.

Noborder Scales the content to fill the specified area, without distortion but possibly with some cropping, while maintaining the original aspect ratio of the application.

Exactfit Makes the entire content visible in the specified area without trying to preserve the original aspect ratio. Distortion can occur.

The default value is *showall* if this attribute is omitted (and *width* and *height* values are percentages).

Value: *showall* | *noborder* | *exactfit*

Template variable: *$SC*

align attribute Specifies the *align* value for the *object*, *embed*, and *img* tags and determines how the SWF file is positioned within the browser window.

Default Centers the application in the browser window and crops edges if the browser window is smaller than the application.

L, R, and T Align the application along the left, right, or top edge, respectively, of the browser window and crop the remaining three sides as needed.

salign parameter (Optional) Specifies where a scaled SWF file is positioned in the area that the *width* and *height* settings define.

L, R, and T Align the application along the left, right, or top edge, respectively, of the browser window and crop the remaining three sides as needed.

TL and TR Align the application to the top-left and top-right corner, respectively, of the browser window and crop the bottom and remaining right or left side as needed.

If this attribute is omitted, the content is centered in the browser window.

Value: *L* | *R* | *T* | *B* | *TL* | *TR*

Template variable: *$SA*

base attribute (Optional) Specifies the base directory or URL used to resolve all relative path statements in the SWF file. This attribute is helpful when you keep SWF files in a different folder from your other files.

Value: base directory or URL

menu attribute or parameter (Optional) Specifies what type of menu appears when the viewer right-clicks (Windows) or Command-clicks (Macintosh) the application area in the browser.

true shows the full menu, which gives the user several options to enhance or control playback.

false shows a menu that contains only the About Adobe Flash Player 6 option and the Settings option.

The default value is *true* if this attribute is omitted.

Value: *true* | *false*

Template variable: *$ME*

wmode attribute or parameter (Optional) Lets you use the transparent Animate content, absolute positioning, and layering capabilities available in Internet Explorer 4.0. The *wmode* paramater is also used for hardware acceleration in Flash Player 9 and later.

The default value is *Window* if this attribute is omitted. Applies to *object* only.

Window Plays the application in its own rectangular window on a web page. Window indicates that the Animate application has no interaction with HTML layers and is always the top-most item.

Opaque Makes the application hide everything behind it on the page.

Transparent Makes the background of the HTML page show through all the transparent portions of the application and can slow animation performance.

Opaque windowless and Transparent windowless Both interact with HTML layers, letting layers above the SWF file block out the application. Transparent allows transparency so that HTML layers below the SWF file can be seen through the background of the SWF file; opaque does not.

Direct Level 1 - Direct mode hardware acceleration is turned on. The other window mode settings apply only when hardware acceleration is turned off.

GPU Level 2 - GPU mode hardware acceleration is turned on. The other window mode settings apply only when hardware acceleration is turned off.

Value: *Window* | *Opaque* | *Transparent* | *Direct* | *GPU*

Template variable: *$WM*

allowscriptaccess attribute or parameter Use *allowscriptaccess* to let your Animate application communicate with the HTML page hosting it. The *fscommand()* and *getURL()* operations can cause JavaScript to use the permissions of the HTML page, which can be different from the permissions of your Animate application. This has important implications for cross-domain security.

always Permits scripting operations at all times.

never Forbids all scripting operations.

samedomain Permits scripting operations only if the Animate application is from the same domain as the HTML page.

The default value that all HTML publish templates use is *samedomain*.

Value: *always* | *never* | *samedomain*

SeamlessTabbing parameter (Optional) Lets you set the ActiveX control to perform seamless tabbing, so that the user can tab out of a Animate application. This parameter works only in Windows with the Flash Player ActiveX control, version 7 and higher.

true (or omitted) Sets the ActiveX control to perform seamless tabbing: After users tab through the Animate application, the next tab keypress moves the focus out of the Animate application and into the surrounding HTML content or to the browser status bar if nothing can have focus in the HTML following the Animate application.

false Sets the ActiveX control to behave as it did in version 6 and earlier: After users tab through the Animate application, the next tab keypress wraps the focus around to the beginning of the Animate application. In this mode, you cannot use the tab key to advance the focus past the Animate application.

Value: *true* | *false*

Examples using object and embed tags

For *object*, four settings (*height*, *width*, *classid*, and *codebase*) are attributes that appear in the *object* tag; all others are parameters that appear in separate, named *param* tags, as shown in the following example:

```
<object classid="clsid:d27cdb6e-ae6d-11cf-96b8-444553540000" width="100"
height="100"
codebase="http://fpdownload.adobe.com/pub/shockwave/cabs/flash/swflash.cab#version=9,0,0,0">
<param name="movie" value="moviename.swf">
<param name="play" value="true">
<param name="loop" value="true">
<param name="quality" value="high">
</object>
```

For the *embed* tag, all settings (such as *height*, *width*, *quality*, and *loop*) are attributes that appear between the angle brackets of the opening *embed* tag, as shown in the following example:

```
<embed src="moviename.swf" width="100" height="100" play="true"
loop="true" quality="high"
pluginspage="http://www.adobe.com/shockwave/download/index.cgi?P1_Prod_Version=ShockwaveFlas
h">
</embed>
```

To use both tags, position the *embed* tag before the closing *object* tag, as shown in the following example:

```
<object classid="clsid:d27cdb6e-ae6d-11cf-96b8-444553540000" width="100"
height="100"
codebase="http://fpdownload.adobe.com/pub/shockwave/cabs/flash/swflash.cab#version=9,0,0,0">
<param name="movie" value="moviename.swf">
<param name="play" value="true">
<param name="loop" value="true">
<param name="quality" value="high">
<embed src="moviename.swf" width="100" height="100" play="true”
loop="true" quality="high"
pluginspage="http://www.adobe.com/shockwave/download/index.cgi?P1_Prod_Version=ShockwaveFlas
h">
</embed>
</object>
```

Note:

If you use the object and embed tags, use identical values for each attribute or parameter to ensure consistent playback across browsers. The swflash.cab#version=9,0,0,0 parameter is optional; only omit this parameter if you don't want to check for the version number.

Browsers that support windowless modes

For detailed information about web browser support for the WMODE attribute, see the table in TechNote 12701: Flash OBJECT Tag Attributes.

Specify publish settings for Flash Player detection

Flash Version Detection configures your document to detect the version of Flash Player that the user has and sends the user to an alternative HTML page if the user does not have the targeted player. The alternative HTML page contains a link to download the latest version of Flash Player

Flash Player detection is available only for publish settings set to Flash Player 4 or later, and for SWF files embedded in the Animate Only or HTTPS templates.

Note:

Flash Player 5 and later are installed on 98% of Internet-connected computers, making Flash Player detection a reasonable method to ensure that end users have the correct version of Animate installed to view your content.

The following HTML templates do not support Flash Player detection because the JavaScript in these templates conflicts with the JavaScript used to detect the Flash Player:

- Animate for PocketPC 2003
- Animate with AICC Tracking
- Animate with FSCommand
- Animate with Named Anchors
- Animate with SCORM Tracking

Note:

Image Map HTML template does not support Player detection because they do not embed the Flash Player.

1. Select File > Publish Settings, and click the HTML Wrapper category in the left column.
2. Select one of the Animate Only templates or the Animate HTTPS template from the Template pop-up menu. These templates support the single-page HTML detection kit. Any of these templates enable the Detect Animate Version check box and the version number text fields.
3. Select the Detect Animate Version check box. Your SWF file is embedded in a web page that includes Flash Player detection code. If the detection code finds an acceptable version of Flash Player installed on the end user's computer, the SWF file plays as designed.
4. (Optional) To specify precise revisions of Flash Player, use the Major Revision and Minor Revision text fields. For example, specify Flash Player version 10.1.2 if it provides a feature specific to displaying your SWF file.

   When you publish your SWF file, Animate creates a single HTML page in which to embed the SWF file and the Flash Player detection code. If an end user does not have the version of Animate you've specified to view the SWF file, an HTML page appears with a link to download the latest version of Flash Player.

Specify publish settings for GIF files

Use GIF files to export drawings and simple animations from Animate for use in web pages. Standard GIF files are compressed bitmaps.

An animated GIF file (sometimes referred to as a GIF89a) offers a simple way to export short animation sequences. Animate optimizes an animated GIF file, storing only frame-to-frame changes.

Animate exports the first frame in the SWF file as a GIF file, unless you mark a different keyframe for export by entering the *#Static* frame label in the Property inspector. Animate exports all the frames in the current SWF file to an animated GIF file unless you specify a range of frames for export by entering the *#First* and *#Last* frame labels in the appropriate keyframes.

Animate can generate an image map for a GIF file to maintain URL links for buttons in the original document. Use the Property inspector to place the frame label #Map in the keyframe in which to create the image map. If you don't create a frame label, Animate creates an image map using the buttons in the last frame of the SWF file. Create an image map only if the *$IM* template variable is present in the template you select.

1. Select File > Publish Settings, and click GIF Image in the left column of the dialog box.

2 For the GIF filename, use the default filename or enter a new filename with the .gif extension.

3 Select options for the GIF file:

Size Select Match Movie to make the GIF the same size as the SWF file and maintain the aspect ratio of your original image or enter values for width and height in pixels for the exported bitmap image.

Playback Determines whether Animate creates a still (Static) image or an animated GIF (Animation). If you select Animation, select Loop Continuously or enter the number of repetitions.

4 To specify additional appearance settings for the exported GIF file, expand the Colors section and select one of the following options:

(CS6 and earlier versions only) Optimize Colors Removes any unused colors from a GIF file's color table. This option reduces the file size without affecting image quality, but slightly increases the memory requirements. This option has no effect on an adaptive palette. (An adaptive palette analyzes the colors in the image and creates a unique color table for the selected GIF file.)

(CS6 and earlier versions only) Interlace Incrementally shows the exported GIF file in a browser as it downloads. Lets the user see basic graphic content before the file completely downloads and can download the file faster over a slow network connection. Do not interlace an animated GIF image.

Smooth Applies anti-aliasing to an exported bitmap to produce a higher-quality bitmap image and improve text display quality. However, smoothing might cause a halo of gray pixels to appear around an anti-aliased image placed on a colored background, and it increases the GIF file size. Export an image without smoothing if a halo appears or if you're placing a GIF transparency on a multicolored background.

(CS6 and earlier versions only) Dither Solids Applies dithering to solid colors as well as gradients.

(CS6 and earlier versions only) Remove Gradients (Default is off) Converts all gradient fills in the SWF file to solid colors using the first color in the gradient. Gradients increase the size of a GIF file and are often poor quality. To prevent unexpected results, select the first color of your gradients carefully if you use this option.

5 **(CS6 and earlier versions only)** To determine the transparency of the application's background and the way alpha settings are converted to GIF, select one of the following Transparent options:

Opaque Makes the background a solid color.

Transparent Makes the background transparent.

Alpha Sets partial transparency. Enter a Threshold value between 0 and 255. A lower value results in greater transparency. A value of 128 corresponds to 50% transparency.

6 **(CS6 and earlier versions only)** To specify how pixels of available colors are combined to simulate colors not available in the current palette, select a Dither option. Dithering can improve color quality, but it increases the file size.

None Turns off dithering and replaces colors not in the basic color table with the solid color from the table that most closely approximates the specified color. Turning dithering off can result in smaller files but unsatisfactory colors.

Ordered Provides good-quality dithering with the smallest increase in file size.

Diffusion Provides the best-quality dithering but increases file size and processing time. Works only with the web 216-color palette selected.

7 **(CS6 and earlier versions only)** To define the image's color palette, select one of the following Palette types:

Web 216 Uses the standard 216-color, web-safe palette to create the GIF image, for good image quality and the fastest processing on the server.

Adaptive Analyzes the colors in the image and creates a unique color table for the selected GIF file. Best for systems displaying thousands or millions of colors; it creates the most accurate color for the image but increases file size. To

reduce the size of a GIF file with an adaptive palette, use the Max Colors option to decrease the number of colors in the palette. To set the number of colors used in the GIF image, enter a value for Max Colors. A smaller number of colors can produce a smaller file but can degrade the colors in the image

Web Snap Adaptive Is the same as the Adaptive palette option except it converts similar colors to the web 216-color palette. The resulting color palette is optimized for the image, but when possible Animate uses colors from the web 216-color palette. This produces better colors for the image when the web 216-color palette is active on a 256-color system. To set the number of colors used in the GIF image, enter a value for Max Colors. A smaller number of colors can produce a smaller file but can degrade the colors in the image

Custom Specifies a palette that you optimized for the selected image. The custom palette is processed at the same speed as the web 216-color palette. To use this option, know how to create and use custom palettes. To select a custom palette, click the Palette folder icon (the folder icon that appears at the end of the Palette text field), and select a palette file. Animate supports palettes saved in the ACT format that some graphics applications export.

Specify publish settings for JPEG files

The JPEG format lets you publish a FLA file as a highly compressed, 24-bit bitmap. Generally, GIF format is better for exporting line art, and JPEG format is better for images with continuous tones, such as photographs, gradients, or embedded bitmaps.

Animate exports the first frame in the SWF file as a JPEG, unless you mark a different keyframe for export by entering the *#Static* frame label in the Timeline.

1. Select File > Publish Settings, and select JPEG Image in the left column.
2. For the JPEG filename, either use the default filename, or enter a new filename with the .jpg extension.
3. Select options for the JPEG file:

   Size Select Match Movie to make the JPEG image the same size as the Stage and maintain the aspect ratio of your original image, or enter values for width and height in pixels for the exported bitmap image.

   Quality Drag the slider or enter a value to control the amount of JPEG file compression. The lower the image quality, the smaller the file size, and the reverse. To determine the best compromise between size and quality, try different settings.

   ***note**: To change the object's compression setting, use the Bitmap Properties dialog box to set the bitmap export quality per object. The default compression option in the Bitmap Properties dialog box applies the Publish Settings JPEG Quality option.*

   Progressive Show Progressive JPEG images incrementally in a web browser, which makes images appear faster when loading with a slow network connection. Similar to interlacing in GIF and PNG images.
4. Click OK.

Specify publish settings for PNG files

PNG is the only cross-platform bitmap format that supports transparency (an alpha channel). It is also the native file format for Adobe® Fireworks®.

Animate exports the first frame in the SWF file as a PNG file, unless you mark a different keyframe for export by entering the *#Static frame* label in the Timeline.

1. Select File > Publish Settings, and select PNG Image in the left column.
2. For the PNG filename, either use the default filename, or enter a new filename with the .png extension.

3 For Size, select Match Movie to make the PNG image the same size as the SWF file and maintain the aspect ratio of your original image, or enter values for Width and Height in pixels for the exported bitmap.

4 For Bit Depth, set the number of bits per pixel and colors to use in creating the image. The higher the bit depth, the larger the file.

8-bit per channel (bpc) for a 256-color image

24-bit for thousands of colors

24 bit with Alpha for thousands of colors with transparency (32 bpc)

5 To specify appearance settings for the exported PNG, select from the following options:

(CS6 and earlier versions only) Optimize Colors Removes any unused colors from a PNG file's color table, reducing the file size by 1000 to 1500 bytes without affecting image quality but increasing the memory requirements slightly. Has no effect on an adaptive palette.

(CS6 and earlier versions only) Interlace Incrementally shows the exported PNG in a browser as it downloads. Lets the user see basic graphic content before the file completely downloads and might download the file faster over a slow network connection. Do not interlace an animated PNG file.

Smooth Applies anti-aliasing to an exported bitmap to produce a higher-quality bitmap image and improve text display quality. However, smoothing might cause a halo of gray pixels to appear around an anti-aliased image placed on a colored background, and it increases the PNG file size. Export an image without smoothing if a halo appears or if you're placing a PNG transparency on a multicolored background.

(CS6 and earlier versions only) Dither Solids Applies dithering to solid colors and gradients.

(CS6 and earlier versions only) Remove Gradients (Default is off) Converts all gradient fills in the application to solid colors using the first color in the gradient. Gradients increase the size of a PNG and are often poor quality. To prevent unexpected results, select the first color of your gradients carefully if you use this option.

6 **(CS6 and earlier versions only)** If you selected 8-bpc for Bit Depth, select a Dither option to specify how pixels of available colors are mixed to simulate colors not available in the current palette. Dithering can improve color quality, but it increases file size. Select from the following options:

None Turns off dithering and replaces colors not in the basic color table with the solid color from the table that most closely approximates the specified color. Turning dithering off can produce smaller files but unsatisfactory colors.

Ordered Provides good-quality dithering with the smallest increase in file size.

Diffusion Provides the best-quality dithering but increases file size and processing time. It also works only with the Web 216-color palette selected.

7 **(CS6 and earlier versions only)** If you selected 8-bpc for Bit Depth, select one of the following Palette Types to define the color palette for the PNG image:

Web 216 Uses the standard 216-color, web-safe palette to create the PNG image, for good image quality and the fastest processing on the server.

Adaptive Analyzes the colors in the image and creates a unique color table for the selected PNG file. Best for systems showing thousands or millions of colors; it creates the most accurate color for the image but results in a file size larger than a PNG created with the web-safe 216-color palette.

Web Snap Adaptive Is the same as the Adaptive palette option except that it converts colors similar to the web-safe 216-color palette. The resulting color palette is optimized for the image, but when possible, Animate uses colors from the web-safe 216-color palette. This produces better colors for the image when the web-safe 216-color palette is active on a 256-color system. To reduce the size of a PNG file with an adaptive palette, use the Max Colors option to decrease the number of palette colors.

Custom Specifies a palette that you optimized for the selected image. The custom palette is processed at the same speed as the web-safe 216-color palette. To use this option, know how to create and use custom palettes. To select a custom palette, click the Palette folder icon (the folder icon that appears at the end of the Palette text field), and select a palette file. Animate supports palettes saved in the ACT format that leading graphics applications export.

8 **(CS6 and earlier versions only)** If you selected the Adaptive or Web Snap Adaptive palette, enter a value for Max Colors to set the number of colors used in the PNG image. A smaller number of colors can produce a smaller file but might degrade the colors in the image.

9 **(CS6 and earlier versions only)** To select a line-by-line filtering method to make the PNG file more compressible and experiment with the different options for a particular image, select one of the following Filter Options:

None Turns off filtering.

Sub Transmits the difference between each byte and the value of the corresponding byte of the previous pixel.

Up Transmits the difference between each byte and the value of the corresponding byte of the pixel immediately above.

Average Uses the average of the two neighboring pixels (left and above) to predict the value of a pixel.

Path Computes a simple linear function of the three neighboring pixels (left, above, upper left), and selects the neighboring pixel closest to the computed value as a predictor of the color.

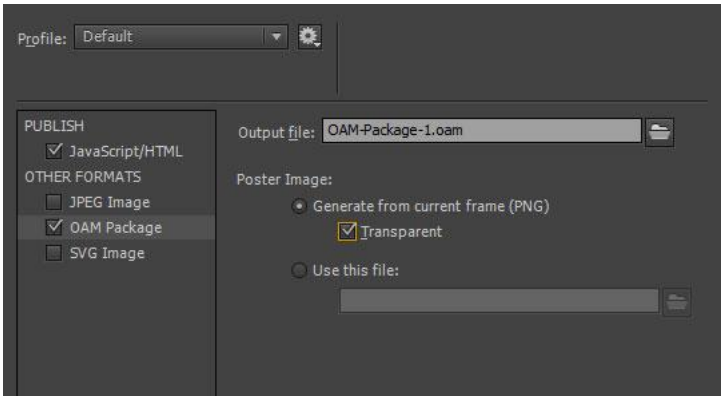
Adaptive Analyzes the colors in the image and creates a unique color table for the selected PNG file. Best for systems showing thousands or millions of colors; it creates the most accurate color for the image but results in a file size larger than a PNG created with the web 216-color palette. Reduce the size of a PNG created with an adaptive palette by decreasing the number of colors in the palette.

Specify publish settings for OAM export

You can now export Animate content in ActionScript, WebGL, or HTML5 Canvas to OAM (.oam) animated widget files. The OAM files generated from Animate can be placed in Dreamweaver, Muse and InDesign. To export your Animate content to OAM format, do the following:

1 Click **File** > **Publish Settings**.

2 On the left panel of the Publish Settings dialog box, select **OAM**.



OAM Settings

3 In the **Output File** box, select a location and type the name of the package.

4 Under **Poster Image**, select one of the following:

- If you want to generate the OAM package from contents of the current frame, select **Generate from current frame (PNG)**. Select **Trasparent** if you want to generate a transparent PNG image.
- If you want generate OAM from another file, specify the path of the file in the **Use this file** box.
- To generate transparent OAMs, set the Stage background to transparent and publish as OAM. For more information on setting the stage background, see Canvas transparency.
- To generate responsive OAMs, set the responsive setting in the Publish Settings dialog box. For more information on responsive settings, see Basic settings

5 Click **Publish**. You can view the OAM package in the saved location.

Video

Preview the publishing format and settings

The Publish Preview command exports the file and opens the preview in the default browser. If you preview a QuickTime video, Publish Preview starts the QuickTime video Player. If you preview a projector, Animate starts the projector.

? Select File > Publish Preview, and select the file format to preview.

Using the current Publish Settings values, Animate creates a file of the specified type in the same location as the FLA file. This file remains in this location until you overwrite or delete it.

Note:

If a FLA created in Animate CC is opened in Flash Professional CS6, the publish settings for those fields unavailable with Animate CC, are set to default.

Using publish profiles

Publish profiles let you:

- Save a publish settings configuration, export it, and import the publish profile to other documents or for others to use.
- Import publish profiles to use in your document.
- Create profiles to publish in several media formats.
- Create a publish profile for in-house use that differs from the way you'd publish the files for a client.
- Create a standard publish profile for your company to ensure files are published uniformly.

Publish profiles are saved at the document rather than application level.

Create a publish profile

1 In the Publish Settings dialog box, click the Profile Options menu and choose Create Profile.

2 Name the publish profile, and click OK.

3 Specify the publish settings for your document, and click OK.

Duplicate, modify, or delete a publish profile

? From the Profile pop-up menu in the Publish Settings dialog box (File > Publish Settings), select the publish profile to use:

- To create a duplicate profile, click the Profile Options menu and choose Duplicate Profile. Enter the profile name in the Duplicate Name text field, and click OK.
- To modify a publish profile, select it from the Profile menu, specify the new publish settings for your document, and click OK.
- To delete a publish profile, click the Profile Options menu and choose Delete Profile. Then click OK.

Export a publish profile

1 Select File > Publish Settings, click the Profile Options menu, and choose Export Profile.

2 In the Profile Options menu, select Export Profile. Export the publish profile as an .APR file for import into other documents.

3 Accept the default location in which to save the publish profile or browse to a new location, and click Save.

Import a publish profile

Note:

Importing Publish Profiles as xml has been deprecated and not recommended. Publish Profiles are now exported as. APR only.

Other users can create and export publish profiles, which you can import and select as a publish settings option.

1 Select File > Publish Settings, click the Profile Options menu, and choose Import Profile.

2 Browse to the publish profile .APR file, and click Open.

Custom HTML5 templates

Animate CC supports custom templates for the wrapper HTML file during the publishing of HTML5 Canvas projects. You can use the default template, import a custom HTML template file, or export the current template to an external file.

You can use the following options:

- **Use Default**: Use the default template for generating the HTML wrapper file while publishing.
- **Import New**: Import a custom template based on which the HTML wrapper file is created while publishing.
- **Export**: Export the current template being used for publishing.

Creating your custom template

Export the default template, modify it, and import it to publish the canvas output with your modifications. The modified (custom) template should have all the tokens (explained in default template) present in the default template.

Attach a template to your publish profile

You can now attach HTML5 Canvas templates to your publish profiles to efficiently create HTML5 content, which are consistent. To add an existing template to a profile:

1 Click **File > Publish Settings**.

2 In the **Publish Settings** dialog box, select the **Advanced** tab.

3 In the **Profile** box, select the profile to which you want to import and add a new template.

4 Click **Import New**, select the template and click **Open**.

Exporting projector files

Projectors are Animate files that contain both the published SWF file and Flash Player file. Projectors can play like a normal application, without the need for a web browser, the Flash Player plug-in, Adobe AIR, or any other platform runtimes.

Animate CC allows you to publish projectors for Windows and MAC operating systems. When exported, a projector file is generated as *.exe* for Windows and *.app* for MAC.

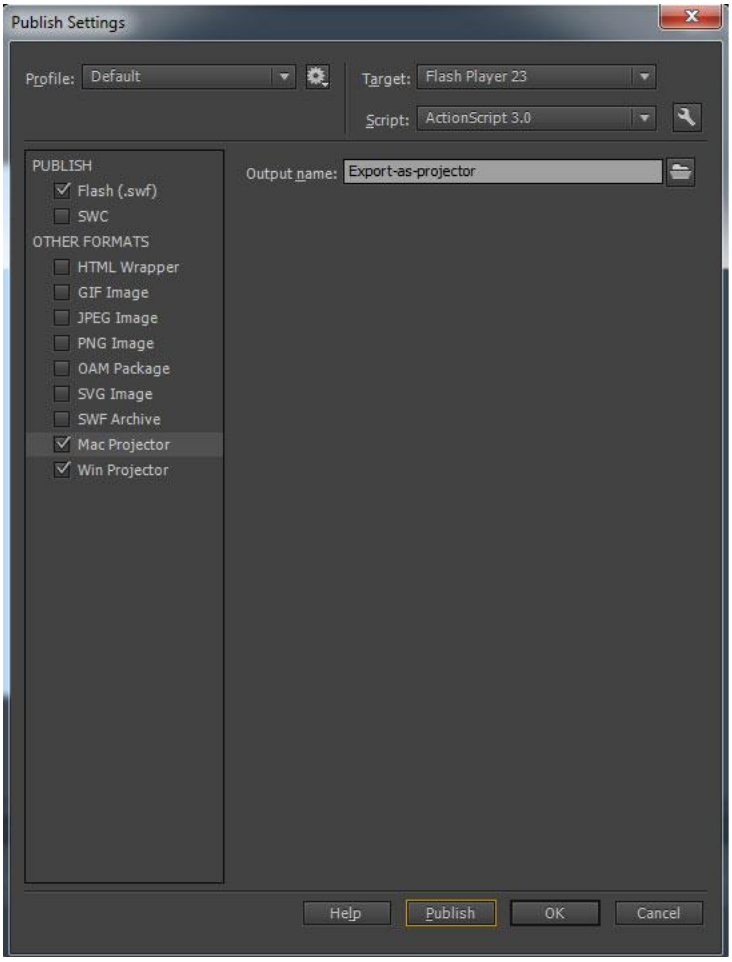
Note:

The Export as Projector feature was deprecated in the June 2013 release, and has been re-enabled in the June 2014 release.

Exporting Projector files

To export projector files from Animate CC, perform the following steps:

1 In Animate CC, select **File > Publish Settings**



Publish Settings dialog

2 Select any of the following options:

- **Win Projector** to create an .exe file that can be run on Windows computer.
- **Mac Projector** to create an .app file that can be run on MAC.

3 Type the output filename in **Output name** text field. To navigate and specify a location where you want to save the Projector file, click the folder icon.

4 Click **Publish** to export the projector file.

Note:

Projector files cannot be exported for HTML5 Canvas or WebGL (preview) document types.

Export Video with Animate CC (CS6 and earlier versions only)

Note:

This article applies for Flash Professional CS6 and earlier versions only. For latest information about the Export Video functionality using Animate CC, see Exporting Video using Adobe Media Encoder.

About Video for Adobe Flash Player (FLV)

With Animate (CS6 and earlier versions only), you can import or export video with encoded audio. Animate can import FLV video and export FLV or QuickTime (MOV). Use video with communications applications, such as video conferencing or files that contain screen-share encoded data exported from Adobe's Media Server.

When you export video clips from Animate in FLV format with streaming audio, the **Streaming Sound** dialog box settings compress the audio.

Files in the FLV format are compressed with the Sorenson codec.

Export a copy of an FLV file from the Library

1. Right-click the FLV video clip in the **Library** panel.
2. Choose **Properties** from the context menu.
3. In the **Video Properties** dialog box, click **Export**.
4. Enter a name for the exported file. Select a location to save it to, click **Save**, and click **OK**.

About QuickTime

Animate provides two methods of exporting Animate documents as QuickTime:

QuickTime export Exports a QuickTime file that can be distributed as streaming video, on a DVD, or used in a video editing application such as Adobe® Premiere Pro®. QuickTime export is intended for users who want to distribute Animate content, such as animation, in the QuickTime video format.

Be aware that the performance of the computer used to export QuickTime video may affect the quality of the video. If Animate is unable to export each frame, it will drop frames, resulting in poor video quality. If you encounter dropped frames, try using a faster computer with more memory or reduce the frames per second of the Animate document.

Publish as QuickTime Creates an application with a Animate track in the same QuickTime format installed on your computer. This lets you combine the interactive features of Animate with the multimedia and video features of QuickTime in a single QuickTime 4 movie, which anyone with QuickTime 4 or later can view.

If you import a video clip (in any format) into a document as an embedded file, you can publish the document as a QuickTime movie. If you import a video clip in QuickTime format into a document as a linked file, you can also publish the document as a QuickTime movie.

Exports all layers in the Animate document as a single Animate track, unless the document contains an imported QuickTime movie. The imported QuickTime movie remains in QuickTime format in the exported application.

Export QuickTime

1. Select **File** > **Export** > **Export Movie**.
2. Specify settings for the QuickTime movie to export. By default, QuickTime export creates a movie file using the same dimensions as the source Animate document and exports the Animate document in its entirety. The **Export QuickTime Video** dialog box contains the following options:

   Dimensions The width and height in pixels for the frames of the QuickTime movie. You can specify only the width or the height; the other dimension is automatically set to maintain the aspect ratio of your original document. To set both the width and the height independently of each other, deselect **Maintain Aspect Ratio**.

   Note:

If the dimensions of the video are particularly large (for example, 740 x 480 pixels), you may need to change the frame rate of the movie to avoid dropping frames.

Note:

*The **Dimensions** option you set in the **QuickTime Export Settings** dialog is for the width and height of the FLA file exported as video. The dimensions you set in the **QuickTime Settings** dialog specify the size of the exported QuickTime movie. If you do not change the size in the later dialog, it remains as "current" so you do not need to change it.*

Ignore stage color Creates an alpha channel using the stage color. The alpha channel is encoded as a transparent track, letting you overlay the exported QuickTime movie on top of other content to alter the background color or scene.

To create a QuickTime video with an alpha channel, you must select a video **Compression Type** that supports 32-bit encoding with an alpha channel. Codecs that support this are Animation, PNG, Planar RGB, JPEG 2000, TIFF, or TGA. You must also select Million of Color+ from the **Compressor/Depth** setting. To set the compression type and color depth, click the **Settings** button in the **Video** category of the **Movie Settings** dialog box.

When last frame is reached Exports the entire Animate document as a movie file.

After time has elapsed The duration of the Animate document to export in hours:minutes:seconds:milliseconds.

QuickTime Settings Opens the advanced QuickTime settings dialog box. The **Advanced** settings let you specify custom QuickTime settings. In general, use the default QuickTime settings, as they provide optimal playback performance for most applications. To modify the QuickTime settings, see the documentation provided with Apple QuickTime Pro for information on the available video parameters.

3 Click **Export**.

Windows AVI (Windows)

Exports a document as a Windows video but discards any interactivity. Good for opening a Animate animation in a video-editing application. Because AVI is a bitmap-based format, documents that contain long or high-resolution animations can quickly become very large.

The **Export Windows AVI** dialog box has the following options:

Dimensions Specifies a width and height, in pixels, for the frames of an AVI movie. Specify only the width or the height; the other dimension is automatically set to maintain the aspect ratio of your original document. To set both the width and the height, deselect **Maintain Aspect Ratio**.

Video Format Selects a color depth. Some applications do not yet support the Windows 32-bpc image format. If this format presents problems, use the older 24-bpc format.

Compress Video Select standard AVI compression options.

Smooth Applies anti-aliasing to the exported AVI movie. Anti-aliasing produces a higher-quality bitmap image, but it can cause a halo of gray pixels to appear around images when placed over a colored background. Deselect if a halo appears.

Sound Format Set the sample rate and size of the soundtrack, and whether to export in mono or stereo. The smaller the sample rate and size, the smaller the exported file, with a possible trade-off in sound quality.

WAV audio (Windows)

Exports only the sound file of the current document to a single WAV file. You can specify the sound format of the new file.

To determine the sampling frequency, bit rate, and stereo or mono setting of the exported sound, select **Sound** Format. To exclude events sounds from the exported file, select **Ignore Event Sounds**.

Export Images and Animated GIFs

Animate introduces the Export image and Export Animated GIF features that helps you to export assets to .png, jpeg, static and animated GIF format in a user-friendly and interactive fashion.

When preparing images for the web and other online media, you often need to compromise between image display quality and the file size of the image.

You can use the optimization features in the Export image dialog box to preview optimized images in different file formats and with different file attributes. You can view multiple versions of an image simultaneously and modify optimization settings as you preview the image to select the best combination of settings for your needs. You can also specify transparency and matting, select options to control dithering, and resize the image to specified pixel dimensions or a specified percentage of the original size.

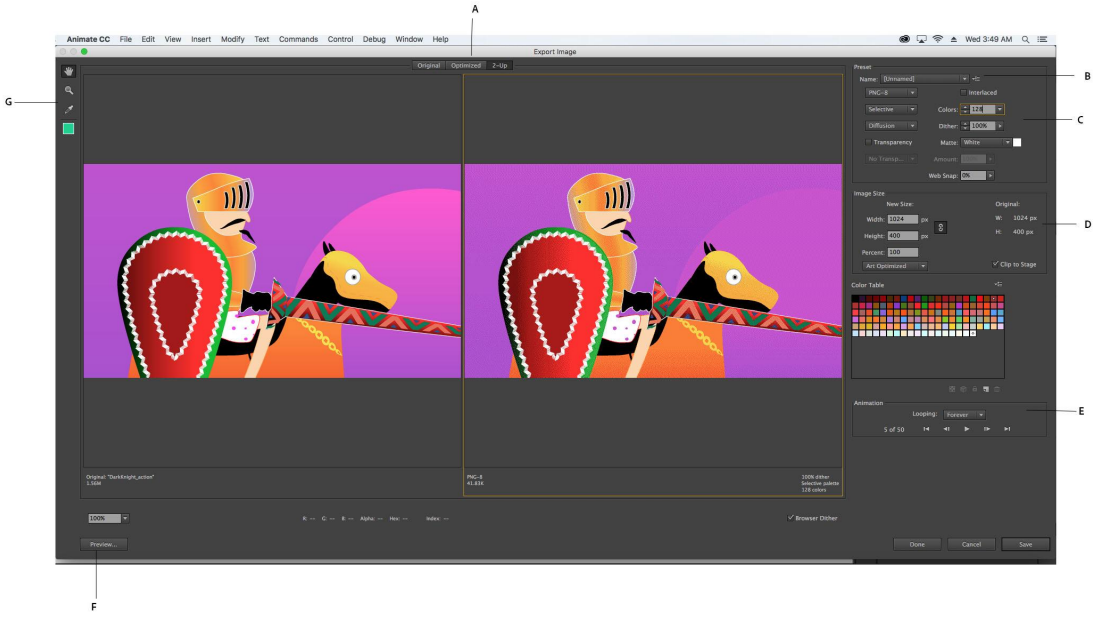
When you save an optimized file using the Export image command, you can choose to generate an HTML file for the image. This file contains all the necessary information to display your image in a web browser.

In Animate, you can use the Save As command to save an image as a GIF, JPEG, or PNG file. Depending on the file format, you can specify image quality, background transparency or matting, color display, and downloading method. However, any web features—such as links and animations—that you've added to a file are not preserved.

You can also use the Animate Image Processor to save copies of a folder of images in JPEG format. You can use the Image Processor to resize and convert the images' color profile to web standard sRGB.

Export images

You use the Export image dialog box (File > > Export > Export image and File > Export > Export Animated GIF) to select optimization options and preview optimized artwork.



***A** Display options **B** Optimize pop-up menu **C** Preset options **D** Image size options **E** Animation options **F** Preview **G** Toolbars*

Preview images in the dialog box

Click a tab at the top of the image area to select a display option:

Original Displays the image with no optimization.

Optimized Displays image with the current optimization settings applied.

2-Up Displays two versions of the image side by side.

Navigate in the dialog box

If the entire artwork is not visible in the Export image dialog box, you can use the Hand tool to bring another area into view. Use the Zoom tool to magnify or reduce the view.

- Select the Hand tool (or hold down the spacebar), and drag in the view area to pan over the image.
- Select the Zoom tool , and click in a view to zoom in; hold down Alt (Windows) or Option (Mac OS), and click in a view to zoom out.

  You can also type a magnification percentage or choose one at the bottom of the dialog box.

View optimized image information and download time

The annotation area below each image in the Export image dialog box provides optimization information. The annotation for the original image shows the file name and file size. The annotation for the optimized image shows the current optimization options, the size of the optimized file, and the estimated download time using the selected modem speed. You can choose a modem speed in the Preview pop-up menu.

Preview image gamma at different values

The gamma value of a computer monitor affects how light or dark an image looks in a web browser. You can preview how your images will look on systems with different gamma values and make gamma adjustments to the image to compensate. Activating a preview option does not affect final image output.

- Choose one of the following options by using the Export image dialog box Preview pop-up menu.

Monitor Color Makes no adjustments to image gamma. Monitor Color is the default setting.

Legacy Macintosh (No Color Management) Simulates the default gamma of 1.8 used by Mac OS 10.5 and earlier.

Windows (No Color Management) Simulates the default gamma of 2.2 used by Windows and Mac OS 10.6 and later.

Use Document Profile Adjusts the gamma to match any attached document color profile in a color-managed document.

Optimize an image for the web

1. Choose File > Export Image or File > Export Animated GIF.
2. Click a tab at the top of the dialog box to select a display option: Optimized or 2-Up.
3. (Optional) If your image contains multiple slices, select one or more slices you want to optimize.
4. Select a preset optimization setting from the Preset menu, or set individual optimization options. The available options change depending on the file format you select.
5. Fine-tune the optimization settings until you are satisfied with the balance of image quality and file size. If your image contains multiple slices, be sure to optimize all the slices.

   Note:

To restore an optimized preview to the original version, select it and then choose Original from the Preset menu.

6 To ensure that the colors your see in the optimized image looks same in different browsers, convert the image colors to sRGB.

Note:

The output metadata conforms to Metadata Working Group standards, so some JPEG metadata is stored in the EXIF and IIM formats, rather than XMP.

7 Select the following options:

None No metadata saved (except for the EXIF copyright notice in JPEG files). Produces the smallest file size.

Copyright Saves copyright notice, rights usage terms, copyright status, and copyright info URL.

Copyright and Contact Info Saves all copyright information, plus the following information: creator, creator job title, e-mail(s), address, city, state/province, postal code, country, telephone(s), and website(s).

All Except Camera Info Saves all metadata, except EXIF data about camera settings such as shutter speed, date and time, focal length, exposure compensation, metering pattern, and flash use.

All Saves all metadata in the file.

8 Click Save.

9 In the Save Optimized As dialog box, do the following, and click Save:

a Enter a file name, and select a location for the resulting file or files.

b Select a Format option to specify what kind of files you want to save: an HTML file and image files, only image files, or only an HTML file.

c (Optional) Set output settings for HTML and image files.

d If your image contains multiple slices, select an option for saving slices from the Slices menu: All Slices or Selected Slices.

Note:

To reset optimization settings to the last saved version, press Alt (Windows) or Option (Mac OS), and click Reset. To keep the same settings the next time you open the Save For Web dialog box, press Alt/Option and click Remember.

For a video on saving files for the web in Illustrator, see www.adobe.com/go/vid0063.

Save or delete optimization presets

You can save optimization settings as a named set and apply the settings to other images. Settings that you save appear in the Preset pop-up menu, together with the predefined named settings. If you edit a named set or a predefined set, the Preset menu displays the term “Unnamed.”

1 Set optimization options as desired, and chooseSave Settings from the Optimize palette menu.

2 Name the settings, and save them in the appropriate folder:

Photoshop (Windows XP) Document and Settings\[Username]\Application Data\Adobe\AdobePhotoshop CS5\Optimized Settings

(Windows Vista) Users\[Username]\AppData\Roaming\Adobe\Adobe Photoshop CS5\Optimized Settings

(Mac OS) Users/[Username]/Library/Preferences/AdobePhotoshop CS5Settings/Optimized Settings

Illustrator (Windows XP) Document and Settings\[Username]\Application Data\Adobe\AdobeIllustrator CS5 Settings\[Language]\Save for Web Settings\Optimize

(Windows Vista) Users\[Username]\AppData\Roaming\Adobe\AdobeIllustrator CS5 Settings\[Language]\Save for Web Settings\Optimize

(Mac OS) Users/[Username]/Library/ApplicationSupport/Adobe/Adobe Illustrator CS5/[Language]/Save for Web Settings/Optimize

Note:

If you save the settings in a another location, they will not be available from the Preset pop-up menu.

3 To delete a preset, select the preset from Preset menu, and select Delete Settings from the Optimize menu.

Compress a web graphic to a specific file size

1 Choose File > Export > Export image or File > Export > Export Animated GIF.

2 Click a tab at the top of the Export image or Export Animated GIF dialog box to select a display option: Optimized or 2-Up.

3 (Optional) Select the slices you want to optimize and the file format you want to use.

4 Select Optimize To File Size from the Optimize menu (to the right of the Preset menu).

5 Enter the desired file size.

6 Select a Start With option:

Current Settings Uses the current file format.

Auto Select GIF/JPEG Automatically selects the optimal format depending on image content.

7 Select a Use option to specify whether you want to apply the specified file size to current slice only, to each slice in the image, or to all slices. Click OK.

Resize artwork while optimizing

In the Export image dialog box, you can resize an image to specified pixel dimensions or to a percentage of the original size.

1 Click the Image Size tab in the Export image dialog box.

2 Set any of the additional options:

Constrain Proportions Maintains the current proportions of pixel width to pixel height.

Note:

None of the features in the Image Size palette are available for the SWF and SVG file formats except Clip To Artboard.

3 Enter new pixel dimensions or specify a percentage by which to resize the image, and click Apply.

Preview optimized images in a web browser

You can preview an optimized image in any web browser installed on your system from the Export image dialog box (File > Export > Export image or File > Export > Export Animated GIF). The browser preview displays the image with a caption listing the image's file type, pixel dimensions, file size, compression specifications, and other HTML information.

- To preview an image in your default web browser, click the browser icon at the bottom of the Export image dialog box.

- In the Browsers dialog box, you can find all browsers on your computer and set the default browser to preview your image.

More Help topics

Optimization options for images and animated GIFs

Output settings for exporting images and animated GIFs

HTML publishing templates

About HTML publishing templates

An Animate HTML template is a file that contains static HTML code and flexible template code consisting of a special type of variables (which differ from ActionScript variables). When you publish a SWF file, Animate replaces these variables with the values you select in the HTML tab of the Publish Settings dialog box and produces an HTML page with your SWF file embedded.

Animate includes templates, suitable for most users' needs, that eliminate the need to manually create an HTML page that displays the SWF file. For example, the Animate Only template is useful for testing your files in a browser. It places the SWF file on the HTML page so that you can view it through a web browser with the Flash Player installed.

To publish a new HTML page, use the same template and change the settings. You can create custom templates using any HTML editor. Creating a template is the same as creating a standard HTML page, except that you replace specific values pertaining to a SWF file with variables that begin with a dollar sign ($).

Animate HTML templates have the following special characteristics:

- A one-line title that appears on the Template pop-up menu on the HTML tab of the Publish Settings dialog box.
- A longer description that appears when you click Info on the HTML tab of the Publish Settings dialog box.
- Template variables beginning with a dollar sign ($) that specify where parameter values should be substituted when Animate generates the output file.

  note: Use a backslash and dollar sign (\$) combination to use a dollar sign for another purpose in the document.
- HTML *object* and *embed* tags that follow the tag requirements of Microsoft Internet Explorer and Netscape® Communicator® or Navigator®, respectively. To display a SWF file properly on an HTML page, follow these tag requirements. Internet Explorer uses the *object* HTML tag to open a SWF file; Netscape uses the *embed* tag.

Customize HTML publishing templates

Modify HTML template variables to create an image map, a text report, or a URL report, or to insert custom values for some of the most common Animate HTML *object* and *embed* tag parameters (for browsers that use ActiveX controls and plug-ins, respectively).

Animate templates can include any HTML content for your application or even code for interpreters such as ColdFusion and ASP.

1 Using an HTML editor, open the Animate HTML template to change. These templates are in the following locations:

- Windows XP or Vista: *boot drive*:\Documents and Settings*user*\Local Settings\Application Data\Adobe\Flash CS5*language*\Configuration\HTML\. The Application Data folder is usually a hidden folder; you might need to change your Windows Explorer settings to see this folder.
- Mac OS X 10.3 and later: *Macintosh HD*/Applications/Adobe Flash CS5/*language*/First Run/HTML.

  The *boot drive* is the drive from which the Windows operating system boots (usually C:). The *user* is the name of the person logged in to the Windows operating system. The *language* is set to an abbreviated language name. For example, in the US, *language* is set to "en" for English.

2 Edit the template.

3 Save the template in the same folder that you retrieved it from.

4 To apply the template settings to your SWF file, select File > Publish Settings, click HTML, and select the template you modified. Animate changes only the template variables in the template selected.

5 Select your remaining publish settings, and click OK.

HTML template variables

The following table lists the template variables that Animate recognizes:

Attribute/parameter	Template variable
Template title	*$TT*
Template description start	*$DS*
Template description finish	*$DF*
Animate (SWF file) title	*$T1*
Animate (SWF file) title for search engine metadata	*$TL*
Description for search engine metadata	*$DC*
Metadata XML string for use with search engines	*$MD*
Width	*$WT*
Height	*$HT*
Movie	*$MO*
HTML alignment	*$HA*
Looping	*$LO*
Parameters for object	*$PO*
Parameters for embed	*$PE*
Play	*$PL*
Quality	*$QU*
Scale	*$SC*
Salign	*$SA*

Wmode	*$WM*
Devicefont	*$DE*
Bgcolor	*$BG*
Movie text (area to write movie text)	*$MT*
Movie URL (location of SWF file URL)	*$MU*
Image width (unspecified image type)	*$IW*
Image height (unspecified image type)	*$IH*
Image filename (unspecified image type)	*$IS*
Image map name	*$IU*
Image map tag location	*$IM*
QuickTime width	*$QW*
QuickTime height	*$QH*
QuickTime filename	*$QN*
GIF width	*$GW*
GIF height	*$GH*
GIF filename	*$GN*
JPEG width	*$JW*
JPEG height	*$JH*
JPEG filename	*$JN*
PNG width	*$PW*
PNG height	*$PH*
PNG filename	*$PN*

Using shorthand template variables

The *$PO* (for *object* tags) and *$PE* (for *embed* tags) template variables are useful shorthand elements. Each variable causes Animate to insert into a template any nondefault values for some of the most common *object* and *embed* parameters, including *PLAY* (*$PL*), *QUALITY* (*$QU*), *SCALE* (*$SC*), *SALIGN* (*$SA*), *WMODE* (*$WM*), *DEVICEFONT* (*$DE*), and *BGCOLOR* (*$BG*).

Sample HTML template

The following Default.HTML template file in Animate includes many of the commonly used template variables:

```
$TTFlash Only
$DS
Display Adobe SWF file in HTML.
$DF
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
$CS
<title>$TI</title>
</head>
<body bgcolor="$BG">
<!--url's used in the movie-->
$MU
<!--text used in the movie-->
$MT
<object classid="clsid:d27cdb6e-ae6d-11cf-96b8-444553540000"
codebase="http://fpdownload.adobe.com/pub/shockwave/cabs/flash/swflash.cab#version=7,0,0,0"
width="$WI" height="$HE" id="$TI" align="$HA">
<param name="allowScriptAccess" value="sameDomain" />
$PO
<embed $PEwidth="$WI" height="$HE" name="$TI" align="$HA" allowScriptAccess="sameDomain"
type="application/x-shockwave-flash" pluginspage="http://www.adobe.com/go/getflashplayer" />
</object>
</body>
</html>
```

Create an image map to substitute for a SWF file

Animate can generate an image map to show any image and maintain the function of buttons that link to URLs. When an HTML template includes the *$IM* template variable, Animate inserts the image map code. The *$IU* variable identifies the name of the GIF, JPEG, or PNG file.

1. In your document, select the keyframe to use for the image map and label it *#Map* in the frame Property inspector (Window > Properties). Use any keyframe with buttons that have attached ActionScript 1.0 or 2.0 *getURL* actions.

   If you don't create a frame label, Animate creates an image map using the buttons in the last frame of the SWF file. This option generates an embedded image map, not an embedded SWF file.

2. To select the frame to show the image map, do one of the following:

   - For PNG or GIF files, label the frame to appear as *#Static*.
   - For JPEG, during the publish operation, place the playhead on the frame to be used for display.

3. In an HTML editor, open the HTML template you'll modify.

4. Save your template.

5. Select File > Publish Settings, click Format, select a format for the image map, and click OK.

   For example, insert the following code in a template:

   ```
   $IM
   <img src=$IS usemap=$IU width=$IW height=$IH BORDER=0></img>
   ```

   This might produce the following code in the HTML document that the Publish command creates:

```
<map name="mymovie">
<area coords="130,116,214,182" href="http://www.adobe.com">
</map>
<img src="mymovie.gif" usemap="#mymovie" width=550 height=400 border=0></img>
```

Creating text and URL reports

The *$MT* template variable causes Animate to insert all the text from the current SWF file as a comment in the HTML code. This is useful for indexing the content of a SWF file and making it visible to search engines.

The *$MU* template variable makes Animate generate a list of the URLs that actions in the current SWF file refer to and insert the list at the current location as a comment. This action lets link verification tools detect and verify the links in the SWF file.

Embedding search metadata

The *$TL* (SWF file title) and *$DC* (description metadata) template variables let you include search metadata in the HTML. This ability can make the SWF file more visible to search engines, and provide meaningful search results. Use the *$MD* template variable to include the search metadata as an XML string.